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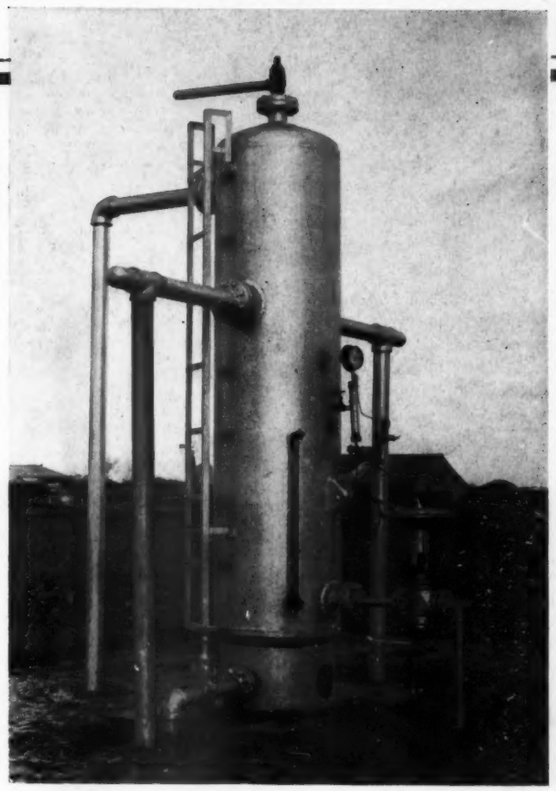

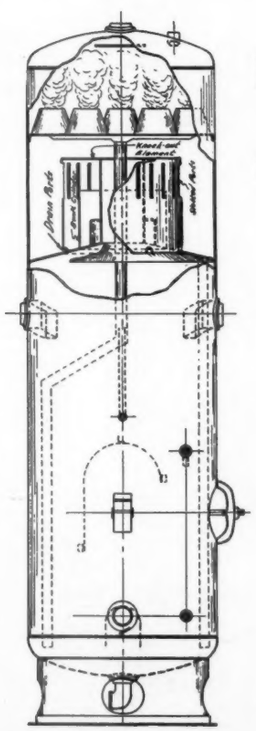

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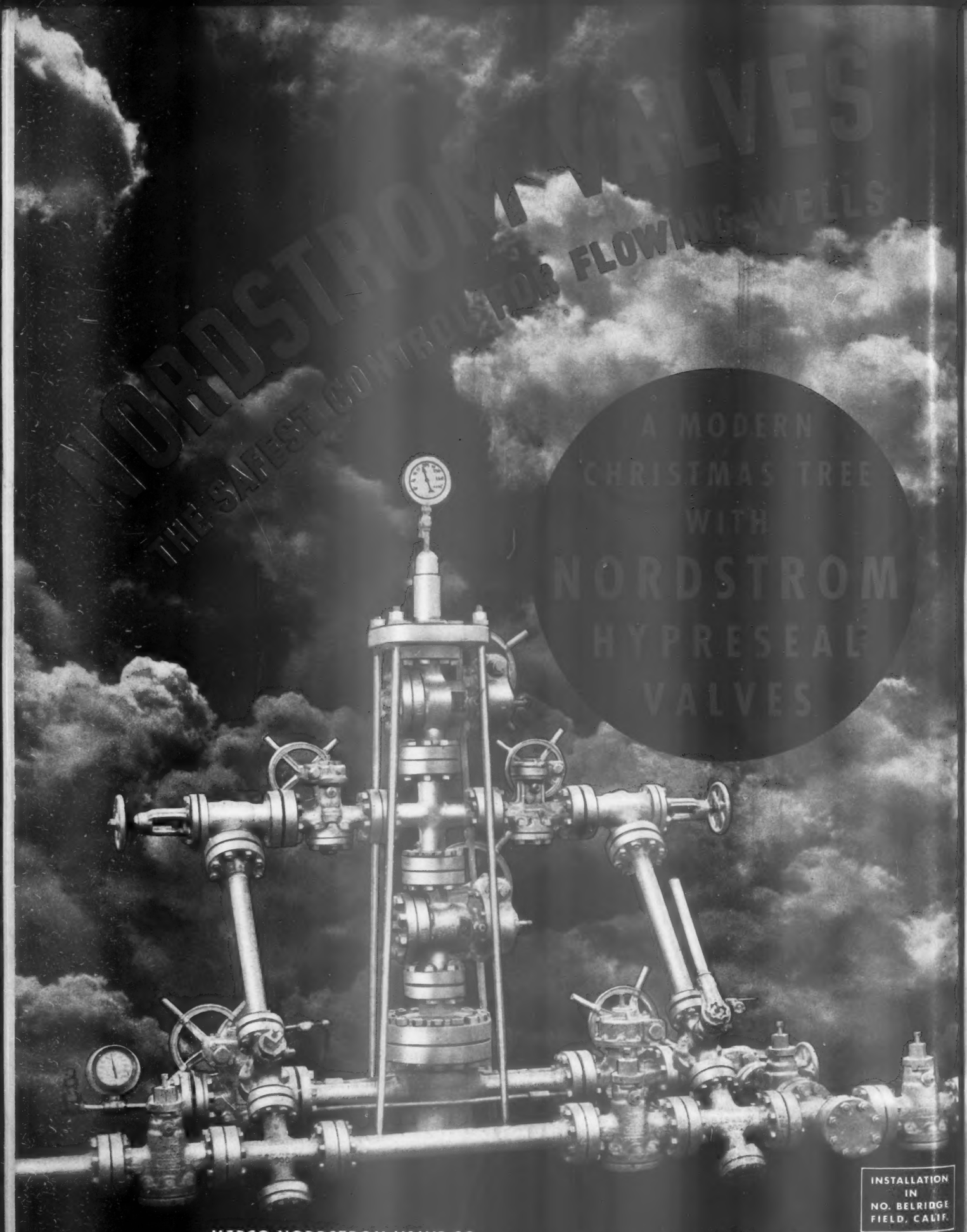
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PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents each. Back copies, when over a year old, 50 cents. CHANGES OF ADDRESS reaching the Tulsa office of the Journal by Saturday take effect with the following issue.

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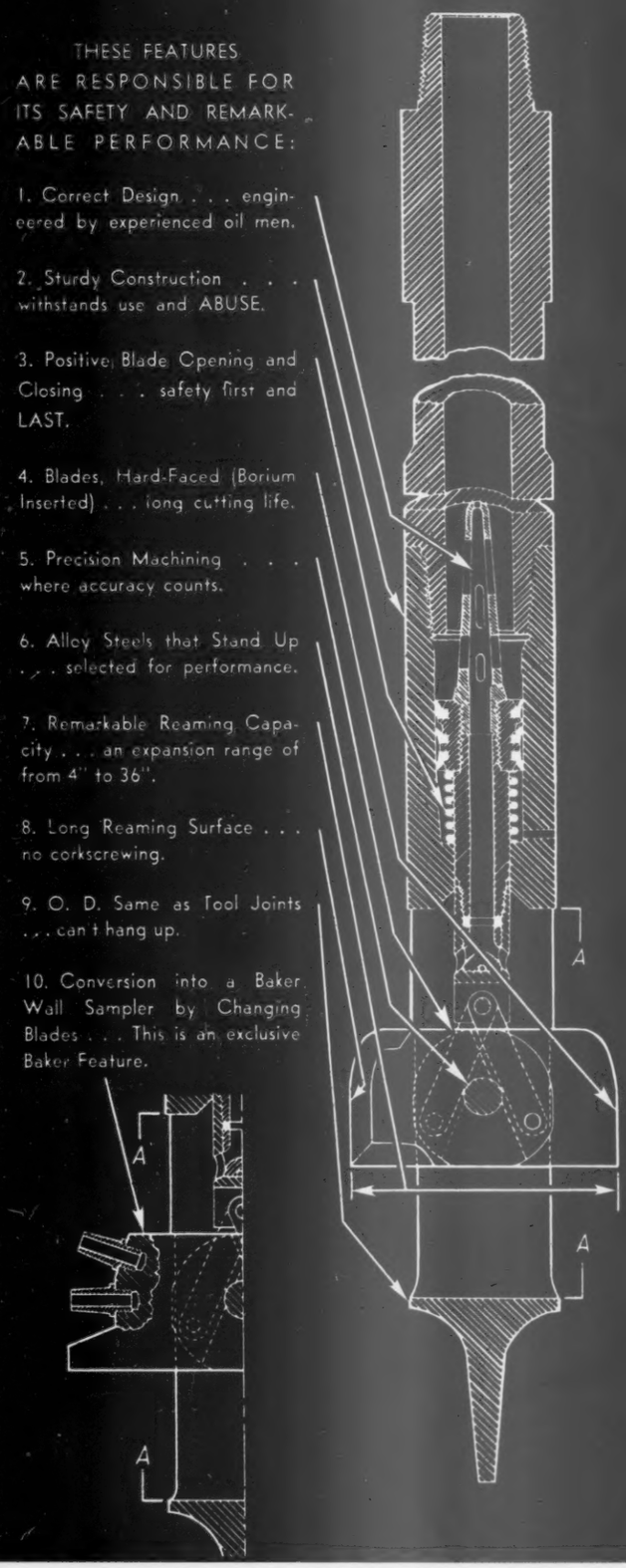

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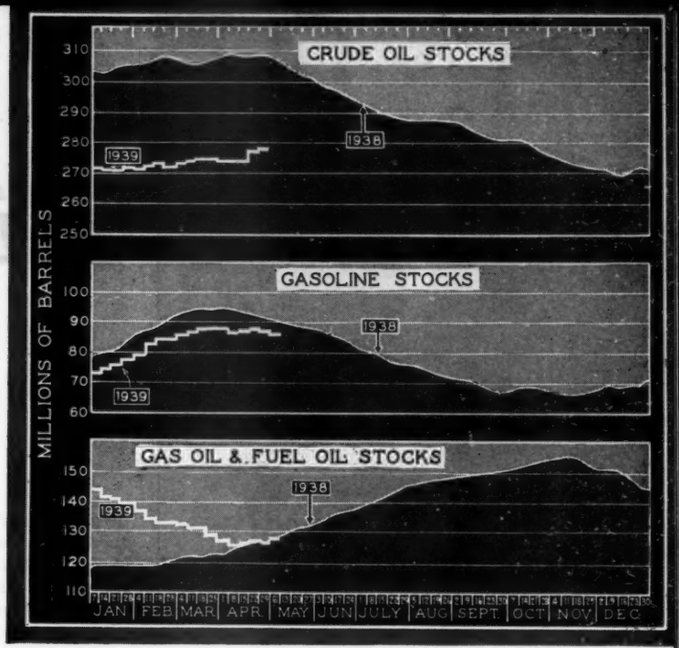
Trends

Increase in Illinois Becomes of Major Market Importance



THE jump in Illinois crude oil production last week to 199,410 bbls. daily has tended to emphasize the dominant position that area now has in the crude oil and refinery markets of the Middle West and Mid-Continent. It is apparent that the crude oil production of that state will pass the peak of 200,000 bbls. daily which was projected a few weeks ago. With the increase in new operations it is certain that the production will reach 225,000 bbls. daily in the near future and may reach 250,000 bbls. before the summer is over.

CRUDE PRODUCTION *3,574,643 barrels daily average — up 12,691. One year ago 3,374,375 barrels.*

CRUDE STOCKS *278,444,000 barrels as of April 29—up 1,288,000. One year ago 307,147,000 barrels.*

GASOLINE STOCKS *86,216,000 barrels as of May 6—down 578,000. One year ago 89,689,000 barrels.*

GAS AND FUEL OIL STOCKS *127,579,000 barrels as of May 6—up 867,000. One year ago 128,863,000 barrels.*

REFINERY RUNS *3,275,000 barrels daily week ending May 6 — down 130,000. One year ago 3,201,000 barrels.*

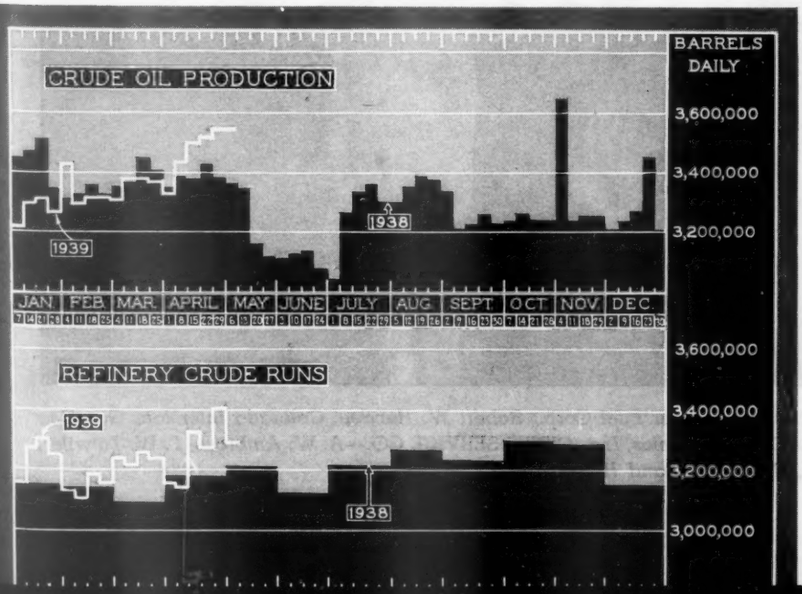
Most of this Illinois crude is being disposed of currently. Comparatively little new storage has been erected by producers, refiners or pipe line companies as a result of the Illinois development of the past two years. The fear that prices might break to lower levels has removed the storage incentive and the policy of producers and buyers has been to dispose of the crude as it becomes available from the wells, regardless of price. This in effect means that any additions to storage have been in other areas, which have lost outlets to the Illinois fields. Complaints regarding Illinois are coming from practically all competitive districts serving the Middle West area. In the refining end it is contended that Illinois gasoline is responsible for price wars at scattered points and is also holding back the general advances in posted dealer and retail prices which are needed to strengthen tankcar markets of the Mid-Continent.

With the steady gain in Illinois production this competitive situation is widening and becoming more acute. Pipe line outlets continue inadequate and railroads are constantly making rate concessions in the movement of crude oil and refinery products. This means lower delivered prices at refineries and bulk stations. As an example it was announced this week that a 22-cent rate (68 cents per barrel) had been authorized in the movement of crude from Illinois crude to refineries in Pennsylvania and western New York. This development does not help the situation in Pennsylvania Grade crudes where prices have been comparatively low since late 1937. An 11-cent rate (34 cents per barrel) has been authorized from the fields to the refineries in the Chicago area. Unless the Illinois legislature approves a conservation act, no improvement in this condition is in prospect through the summer months.

Outside Illinois there were no outstanding developments during the week. Reports for the last half of April show that considerable crude was going to storage at several points, with production last week 150,000 bbls. daily in excess of the recommended level for May. Tankcar gasoline prices were slightly stronger in the Mid-Continent. Heavy fuels are generally strong at Gulf Coast and East Coast points owing to the coal and maritime strikes.

DAILY AVERAGE PRODUCTION FOR WEEK

	May 6, 1939	Bur. Mines May est. of demand	May state allowables	April 29, 1939
Oklahoma City	103,050	.....	.....	104,150
Fitts	27,500	.....	.....	27,750
Remainder of state	329,000	.....	.....	330,225
Total Oklahoma	459,550	455,800	428,000	462,125
East Texas	446,950	.....	.....	446,798
West Texas	230,050	.....	.....	229,196
North Central Texas	112,750	.....	.....	115,550
Texas Panhandle	87,297	.....	.....	74,250
East Central Texas	105,846	.....	.....	105,250
Gulf Coast Texas	371,197	.....	.....	371,348
Southwest Texas	115,898	.....	.....	119,398
Total Texas	1,469,988	1,406,100	1,398,077	1,461,790
North Louisiana	75,670	.....	.....	76,400
Gulf Coast Louisiana	192,696	.....	.....	190,300
Total Louisiana	268,366	261,600	263,634	266,700
California	603,750	582,600	575,000	607,500
Kansas	167,913	152,600	170,350	177,725
Arkansas	55,455	52,900	54,627	54,730
Eastern fields	97,875	102,900	.....	97,700
Illinois	199,410	159,700	.....	185,400
Michigan	62,926	50,000	.....	62,472
New Mexico	116,920	115,500	113,100	113,500
Rocky Mountain area	72,490	85,500	.....	72,310
Total United States	3,574,643	3,425,200	.....	3,561,952



J. D. Creveling and G. J. Neuner, Panhandle Eastern Pipe Line Co.

Air-Conditioning at Natural Gas

By T. F. SMILEY

Air-conditioning, just beginning to capture general interest, provides the natural gas industry with its next big field for market development, according to opinions expressed at the annual convention of the Natural Gas Section, American Gas Association, held this week in Tulsa. Other new uses of natural gas, or improvements in established uses, were described, and the whole range of activities in the production, transmission and distribution of this commodity was discussed in papers prepared by men familiar with their subjects.

The program filled four days, Monday to Thursday inclusive. Its details evoked high commendation of Thomas R. Weymouth, vice president of the Columbia Gas & Electric Corp., general chairman; E. Holley Poe, secretary of the Natural Gas Section, and Elmer F. Schmidt, vice president of the Lone Star Gas Co., chairman of the program committee, who worked tirelessly in its preparation.

General sessions were held in the Akdar Shrine Temple. Sectional meetings were held in the Mayo Hotel. Registrations exceeded 700, delegates streaming in from all parts of the United States. It was estimated that visiting gas men who did not register raised the total to about 1,000.

Monday was devoted to conferences on domestic gas sales, industrial gas sales, natural gas production, natural gas transmission, accounting, employe education, and accident prevention. The general sessions began Tuesday forenoon.

Air-conditioning, which has moved into so important a place in the natural gas industry, was touched upon by various speakers and was a topic of discussion among informal groups of delegates. Mr. Weymouth said the use of gas for this purpose is on the threshold of intensive development. He pointed out that one of the most perplexing problems is the poor load factor of the industry's domestic load, particularly where there is large saturation of househeating business. Sales which serve to fill the valley of the load curve not only benefit the load factor but make it advantageous to increase househeating business. The natural gas industry is always hunting for business of this kind, he said, and one of the most promising fields is offered by air-conditioning. He urged that the industry take advantage of a wonderful opportunity.

Charles R. Bellamy, Columbia Gas & Electric Corp., chairman of the industrial and commercial air-conditioning committee of the A.G.A., discussed the subject exhaustively in a paper delivered before the industrial gas sales conference. Mr. Bellamy said an estimate based on a recent survey indicated that the air-conditioning business should double every three years for an indefinite length of time. A yearly gross business of $350,000,000 within the next 10 years was mentioned as a possibility. What proportion of it would go to natural gas apparently depended largely upon what the industry itself does by way of improving its opportunity.

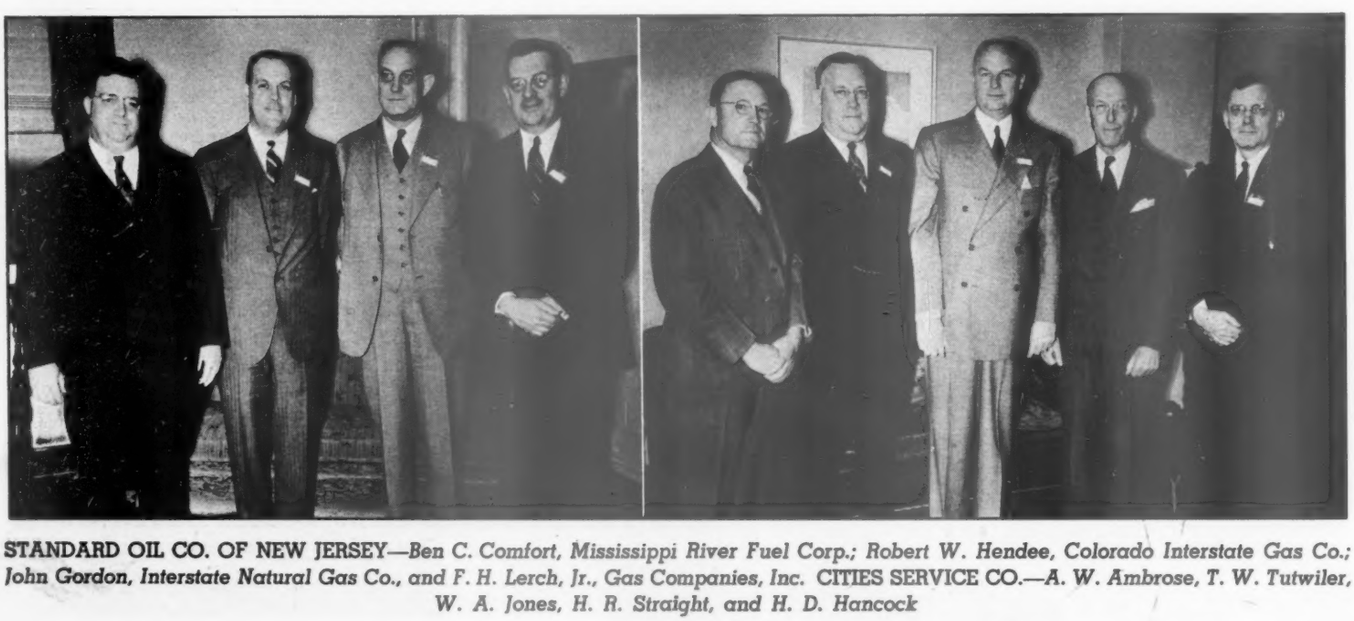
"Vision, optimism, and confidence are needed to plan our campaign," said Mr. Bellamy. "To put gas air-conditioning across, gas companies are going to have to participate with the manufacturers in a campaign of intelligent advertising and sound salesmanship. The summer air-conditioning load is the perfect supplement to our househeating business. At any given price for gas the air-conditioning load is far more attractive to the gas company than an equivalent volume of househeating business.

The simplicity of operating a gas air-conditioning unit is seen in the fact that to change from heating to cooling, or vice versa, it is necessary merely to close one valve and open another.

The newest application of natural gas, alluded to by P. C. Lauinger, president of The Oil and Gas Journal, in a paper on "Advertising Is Good Business," grows out of a recent laboratory discovery that high explosives of great military value may be made cheaply and in unlimited quantity out of natural gas, along with steam and air. Two such explosives, similar in their characteristics to nitroglycerol, now employed in the manufacture of dynamite and double-base military powders, have resulted from the discovery, which is looked upon as of grim importance at a time when nations seem on the brink of war.

As this country has 98 per cent of the world's supply of natural gas and an inconsequential part of its production would fill all possible military requirements, the strategic position of the United States in this connection is apparent. The supply of glycerol, on the other hand, is limited.

Frank H. Trembly, Jr., Philadelphia Gas Works Co., discussing the important service afforded by the Industrial Gas Section of the A.G.A., of which he is chairman, pointed out that the committee on industrial gas research, sponsoring and supervising research in new and improved gas applica-



STANDARD OIL CO. OF NEW JERSEY—*Ben C. Comfort, Mississippi River Fuel Corp.; Robert W. Hendee, Colorado Interstate Gas Co.; John Gordon, Interstate Natural Gas Co., and F. H. Lerch, Jr., Gas Companies, Inc.* **CITIES SERVICE CO.**—*A. W. Ambrose, T. W. Tutwiler, W. A. Jones, H. R. Straight, and H. D. Hancock*

Center of Interest Men's Meeting

tions, had made valuable contributions toward improved gas applications in atmosphere furnaces for metal treating, perfected immersion melting of metals, radiant-tube furnaces for metallurgical and enameling work, luminous-flame heating applications, dehydration summer air-conditioning, and many other industrial and commercial applications.

In a discussion of "Fair Value and Fair Return," P. McDonald Biddison and Ed C. Connor,

Busiest man at convention—E. H. Poe, secretary, Natural Gas Section, A.G.A.

consulting engineers, of Dallas, Tex., said: "Well intentioned, capable and fair-minded men can and do err and may at times arrive at results that are not fair. Nevertheless, the prime requirement for obtaining a fair value and a fair return is fairness in the approach to the problem. Neither the utility nor the public can complain of that which is 'fair.' For 'fair' encompasses the rights of all parties concerned. We may well question however the probabilities of anything 'fair' coming from regulatory commissions whose members, in election campaigns, have pledged themselves in advance, and without knowledge or investigation of the matters involved, as to action on rates, or of commissions whose measure of accomplishment as set forth in annual reports is given in terms of the amount of rate reductions, that is, in terms of benefits to *one* of the parties at interest."

E. G. Hammerschmidt, of the Texoma Natural Gas Co., Fritch, Tex., presented a technical discussion of the prevention and removal of gas hydrate formations in natural gas pipe lines, accompanied by charts.

Louis Ruthenburg, president of Servel, Inc., Evansville, Ind., told of the progress made in the field of household refrigeration, illustrating his talk with lantern slides.

Harry Swenson, of the Peoples Gas Light & Coke Co., Chicago, urged the value of visual displays in his paper on "A Show Will Let Them Know."

"Our industry is outstanding in the number and character of fundamental services it renders in the homes, commercial establishments, and factories of the nation," said Conrad N. Lauer, president of the Philadelphia Gas Works Co. and president of the A.G.A., in his address on "A Mobilized Industry." "No other industry caters so fully to the fundamental needs of the home—modern cooking, water-heating, refrigeration and home-heating services.

New uses of cement in completing and reconditioning gas wells were explained by C. P. Parsons, vice president of the Halliburton Oil Well Cementing Co., Duncan, Okla. He named six different forms of protection gained by proper cementing of new wells and enumerated benefits obtainable through use of cement as a reconditioning agent.

In an address on "Natural Gas and the Banker," Frank R. Denton, president of the Mellon Securities Corp., Pittsburgh, Pa., said: "No one is more desirous of adequate development of a natural resource than a banker. On the other hand, speaking only as a layman who doesn't have a fraction of the knowledge of you gentlemen as to where gas can be found, I doubt whether the Almighty made gas reserves inexhaustible, and I wish to leave with you my hope that the enthusiasm of the industry for rapid development of its markets will not outrun the development of known reserves and that new pipe lines will not be built beyond the capacity of the known and securely available supplies of gas, for the sake of the investor, the consumer and banker. It is my opinion that the natural gas industry has a most promising outlook. There is every reason to believe that with the continuation of its capable management it will be a source of satisfactory profit to its stockholders and a leading utility in the communities which it serves, for many years to come."

The advantages of machines in pipe-line coat-

R. E. Wertz, Amarillo Gas Co., greeted by T. R. Weymouth, Columbia Gas & Electric Co., president of the Natural Gas Section

R. H. Hargrove and N. C. McGowen, United Gas Pipe Line Co.

At the registration desk—Elmer F. Schmidt, Lone Star Gas Co., and R. G. Soper, Dallas Gas Co.

The host company—Frank B. Long, Joseph Bowes, and Fred W. Peters, Oklahoma Natural Gas Co.

ing operations over the old hand methods were stressed by K. N. Fancher, assistant chief engineer of the Northern Natural Gas Co., Omaha, Neb., in his paper on "Latest Developments in Pipe-Line Coating Methods."

Court and commission decisions affecting the natural gas industry were discussed by William A. Dougherty, counsel for the Standard Oil Co. of New Jersey. Mr. Dougherty pointed out that since the change in the personnel of the Supreme Court of the United States there has been a weakening of the doctrine that the imposition of privilege, franchise and sales taxes when no local business was carried on was illegal.

"The field of application for gas engines is wide and varied," said D. W. Reeves, Oklahoma Natural Gas Co., Tulsa, "and is constantly changing with the constantly changing competitive picture. But we do know that there has always been a large diversified field for gas engines and we believe that one will always remain."

Baird H. Markham, director of the American Petroleum Industries Committee, New York, suggested that "circumstances seem to indicate less a need for government investigating business than for business investigating government." He added: "When you stop to consider that there are more than 185,000 taxing jurisdictions alone in the United States, and that each has the power to levy and to try to collect taxes, you can visualize how these taxes must develop and multiply."

J. W. Cowles, manager gas department of the Shell Oil Co., Inc., Tulsa, and a director of the Natural Gasoline Association of America, urged closer cooperation between the natural gas and the natural gasoline organizations, particularly in measures for conservation of residue and waste gases. He recommended adoption of a standard form of dry gas contract.

Preliminary to the first of the general sessions, which occupied Tuesday, Wednesday, and Thursday forenoons, a welcome to the visitors was extended by Dr. T. A. Penney, mayor of Tulsa. Gov. Leon C. Phillips, of Oklahoma, who was to have given an address, was unable to be present, and his place was taken by E. W. Smartt, chairman of the state Board of Affairs.

Mr. Weymouth, as chairman, gave a keynote talk on "Activities of the Natural Gas Industry." He presided at the Tuesday and Thursday sessions. Elmer F. Schmidt, vice chairman, presided Wednesday.

Papers presented at the general sessions and not already mentioned included: "It's Only the Beginning," Edward R. Guyer, president Association of Gas Appliance and Equipment Manufacturers, Chicago; "What We Have in Headquarters," Alexander Forward, managing director of the A.G.A.; "The Place of the Safety Department in the Organization Setup," J. C. Flanagan, assistant to the president, United Gas Pipe Line Co., Houston, Tex.; "Fifty Years of Regulation of Business," George E. Frazer, counsel Association of Gas Appliance and Equipment Manufacturers, Chicago; "Cooperative Research to Date," Dr. John W. Finch and R. A. Cattell, Bureau of Mines, Washington, D. C.

Mr. Weymouth presided at a management sym-

CONRAD N. LAUER
President A.G.A.

posium Tuesday afternoon, when "The Duties of a Local Manager," "The Duties of a District Manager," "Telling the Story of the Company to the Public," "Home Service—the Tool of Management," "Engineering Assistance to the Management," "Sales Direction in Company Management," and "Management, Its Responsibility" were the topics discussed.

H. C. Cooper, whose retirement as president of the Hope Natural Gas Co., Pittsburgh, Pa., was announced this week, presided Wednesday afternoon at the session of the main technical and research committee, of which he is chairman. Reports were given for the gas measurement subcommittee by Mr. Weymouth; pipe-line subcommittee, by Harry D. Hancock, president of Gas Advisers, Inc., New York; gas-well deliveries subcommittee, by N. C. McGowen, president of the United Gas Pipe Line Co., Shreveport, La.; and "Field Practices Dealing with Gas Hydrates in Natural Gas Pipe Lines" was discussed by W. M. Deaton and E. M. Frost, Jr., of the U. S. Bureau of Mines, Amarillo, Tex.

Presiding at the domestic gas sales conferences were F. X. Mettenet, vice president of the Peoples Gas Light & Coke Co., chairman, and Davis M. DeBard, vice president of the Stone & Webster Service Corp., vice chairman; industrial gas sales conferences, Frank H. Trembly, Jr., chairman; Franklin T. Rainey, general sales manager of the Ohio Fuel Gas Co., vice chairman, and J. H. Warden, general sales manager of the Oklahoma Natural Gas Co.; natural gas production conference, J. H. Dunn, general manager of the Shamrock Oil & Gas Co., chairman; natural gas transmission conferences, George M. Parker, Mississippi River Fuel Corp., chairman, and George Young, Michigan Gas Transmission Co., vice chairman; accounting section conference, F. W. Peters, treasurer Oklahoma Natural Gas Co., chairman; employe education and accident prevention conferences, C. L. Hightower, director of safety, United Gas Pipe Line Co.

Col. Maurice M. Walsh, of the Louisville Gas & Electric Co., and C. W. Sears, retired, of Pasadena, Calif., among the 13 men who organized the Natural Gas Association of America (now Natural Gas Section of the A.G.A.) in Kansas City, Mo., in 1906, were early arrivals at the convention.

Credit for the smooth running of the meeting went in great measure to Joseph Bowes, chairman of the general arrangements committee and president of the Oklahoma Natural Gas Co., with his associates, Frank B. Long, chairman of the reception committee; Carl U. Daniels, chairman of the entertainment committee; H. V. Potter, chairman of the publicity committee. All these latter, like Mr. Bowes, fill posts in the Oklahoma Natural Gas Co., which serves the host city and surrounding territory. They emphasized to visitors that there are more all-gas homes in Tulsa than in any other city of comparable population and that Oklahoma cities served with gas have a greater percentage of gas-heated homes than any other similar area in the United States.

They stirred fresh interest too in the Magnolia Petroleum Co. No. 10 Niles in the Cement field of Oklahoma, distinguished as the largest dry gas well ever tested in the industry. The well had an open flow of 224,400,000 cu. ft. daily, with 1,650 pounds rock pressure, under the original spring-gauge test. It now actually shows, under the Bureau of Mines back-pressure method, 640,000,000 cu. ft. daily.

Many delegates visited the Oklahoma Natural's all-gas home, which is entered in the A.G.A.'s national home-building contest. The home demonstrates the advantages of gas air-conditioning, along with the use of gas for cooking, refrigeration, water-heating, and trash-disposal.

ALEX FORWARD
Managing director A.G.A.

E. R. GUYER
President A.G.E.M.

DR. J. W. FINCH
Director Bureau of Mines

WALTER C. BECKJORD
Chairman Technical Section

A. W. AMBROSE
V.P. Cities Service Oil Co.

Public Relations Need Is to Enlist Dealers

By H. STANLEY NORMAN

NEW YORK, May 8.—How to enlist the nation's 400,000 dealers is the prime need of the petroleum industry public relations program. This conclusion is predicated upon the current concentration of individual company effort and upon results of studies of the question since public relations were officially adopted as an industry project at the 1938 annual meeting of the American Petroleum Institute.

Scores of approaches to the matter of satisfactory public relations are being explored by individual companies. Success or failure of the program rests completely in the hands of the individual companies and for that reason it is timely to investigate the mechanics of how the problems are being tackled. It seems scarcely necessary to review the background, the combination of events which virtually drove the industry into seeking better relationship with the general public. Nearly all in the oil industry are familiar with the constantly increasing burden of restrictive legislation. The rising tax burden on petroleum has become a universal topic of discussion. The threats, implied or expressed, of additional legislation of a harmful nature spring up in every state legislature and in Congress at every session.

The industry as a whole has reached the conclusion that the pyramiding taxes and the almost staggering legislative restrictions heaped upon the oil business are the result of tolerance by the public. Logic follows that the oil industry has failed to tell its story adequately to the public and that if conditions are to be arrested or reversed the voters are the people to do the job.

For years the oil industry had gone along with its plentiful share of internal friction and battles, but nevertheless serene in the belief that the public was little interested so long as motorists could buy gasoline and motor oil when and as needed at prices in line with other commodities and if the industry did not obtain more than reasonable profits. Many in the industry were confident that in such circumstances public relations would take care of themselves.

The oil industry's original concept of favorable public relations has proven short of optimum by a wide margin. One of the most severe jolts in bringing about the conclusion that outer relations were not completely satisfactory was produced by the Madison trial and, less severely, by practically every legislative investigation of the petroleum industry. Friction not previously suspected between jobbers and suppliers was brought into the open at Madison.

Although most of the damage was done in earlier years, the oil industry has been branded with the stigma of unscrupulous financial operations. The purchasers of near worthless interests, royalties, stocks and other oil securities or those who paid higher than any reasonable hope of return are permanent ambassadors of ill-will. It is difficult for the public to discriminate between legitimate and illegitimate oil financing. Once victimized by an unscrupulous dealer — and there are literally thousands of victims, particularly in the densely populated East—the offended investor carries a permanent grudge and doesn't hesitate to indict the oil industry at large as often as opportunity is presented.

In some of the older companies the abhorrence of contacts with the public is so deep-seated and of such duration that living within a shell has become an obsession. Such a company policy can not be speedily revised and in these particular cases the internal organization is ill-equipped to court the favor of the public. Some companies falling in this category have made a gesture toward more amiable relations by assigning the task to an employe with "a flair for such things." In the main, however, the arrangement is unsatisfactory. Although the enthusiasm and ambition of an individual plucked from the ranks and assigned to public relations work may be unlimited, he is seldom equipped by training or experience to carry through a commendable job. An analogy would be the hiring of an expert driller to engineer a refinery. Now then, what is the industry doing about these conditions?

Matter of Education

Fundamentally, the oil industry's public relations program is now one of education. Investigations have disclosed that the greatest need and the most fertile field for education is within the industry's personnel. With this conclusion as a starting point practically every important company has from one to several employe educational projects in operation. Managers of public relations departments and their various executives realize that every employe has several personal and social acquaintances outside the oil industry. The certainty exists that friends talk of their work when they come in contact. Therefore, an adequately and accurately informed employe becomes an individual ambassador of good will.

Dealers in a vast majority of instances, under the present system of marketing, are not employes of the company whose products they distribute. Furthermore, the ground upon which companies might approach their dealers with the greatest assurance of an attentive audience is forbidden territory since it involves margins and contracts.

The two most logical remaining avenues of approach to the dealers are house organs, radio broadcasts and paid advertising space for messages of an institutional character. A sincere effort is being made to show the dealers how they are intimately associated with the general oil industry and how their individual welfare is closely bound to that of the general business. Entire issues of house organs are being devoted to picturing the petroleum dealer as a substantial business man within his community and scope of influence and to tying him into the oil industry on a more intimate basis.

It is through the dealer almost exclusively that the oil company comes in direct contact with the public. Efforts have been and continue to be made to make the dealer actively conscious of the tax burden on petroleum. Data showing that taxes have been on an average almost three times as high as earnings during the past 10 years are carried to dealers through various mediums.

One company which operates on an international scale has one man assigned to the duty of conciliating disgruntled dealers. This work has indicated that most of the friction is born of misinformation or misunderstanding and that a man-to-man discussion of the trouble seldom fails to find a meeting ground. It is the policy of this company to obtain a report as speedily as possible on any differences which may arise with any dealer. The company believes that by conciliatory measures it can avoid losing what may have been a thoroughly satisfactory dealer and at the same time prevent liberation of an individual who may spread more venom in his community against the company particularly and the industry in general than ever could be rectified.

At least three companies producing regular radio programs have provided "spots" for the broadcast of institutional information designed for employe, dealer and public information. One of the programs is featuring the record of the oil industry in supplying improved quality motor

PUBLIC INTEREST ACTIVE

The realization has come only recently that the public's interest in the oil industry is broad and active. The people are not longer content with a passive interest. This development in public interest is not confined solely to the oil industry, but is spread to practically all business because of modern communication facilities and because of the spotlight focused on American institutions by politicians. The labor movement has done its share in arousing interest in the internal workings of industry.

fuel at prices lowered almost without interruption for the past 12 years. Service is the theme of another series. The number of employes in the oil industry, reference to generally high wages, safety and other social benefits derived from the oil industry are featured in other brief talks. In these particular radio program "spots" there is only incidental reference to the individual company's products.

In another radio program the romance of oil is presented in dramatic form, starting with the drilling of the first well when there were only three men in the industry compared to 4,000,000 workers and dependents at the present time. The series carries on through dramatic episodes of the first pipe lines, the rush to Pithole, Spindletop, the Glenn and Cushing fields and other high spots in the history of the industry. The program is designed to show the strides made by the petroleum industry and to give the public some conception of its present scope, all with the thought that such details are too little known outside the business.

There are two or three outstanding films currently in circulation on the oil industry among primary schools, universities, civic clubs, churches and in theaters. Other films are planned or are under consideration but they will cover much the same general ground. Those in most popular demand give a reasonably complete picture, showing exploratory methods, drilling, pipe line construction, refineries and distribution facilities. Pictures have proved one of the most effective and most acceptable mediums of telling the oil industry's story to the public.

Some companies are revising their house organs to broaden their reader interest to stockholders, employes, consumers and the outside public. Other companies are segregating their published material into organs with particular appeal to the three main groups. There is a distinct trend toward the "gossipy" type of publication for employes printing the important developments in the various divisions. This method of cementing employes into a more closely knit "family" has proved effective and is being enlarged and expanded by most of the companies previously active in this type of appeal and adopted by others which are just now launching public relations programs.

Decentralization

Due to the fact that most companies operate on a national scale it has been found necessary and practical to decentralize public relations activities. This necessity has pointed the way to establishment of public relations organizations in the various operating districts through which information from the home office manager may be disseminated. In carrying out the decentralized public relations program, committees have been established in various divisions and most of the details are left to these individual groups. The general public relations managers of most companies are leaving much of the initiative to the smaller groups for the good reason that they are in direct contact with local conditions and are perhaps in better position to judge the requirements than a man or a group at some remote spot. However, the home offices are maintaining a stream of instructions and basic material for the guidance of the subsidiary groups.

One of the companies has produced a manual on the history of the organization which has been distributed to approximately 600 men throughout the country functioning in supervisory capacities. The manual contains practically all information any employe could desire, covering the history of earnings, wages, hours, simple explanations of sick and death benefits, insurance, annuities, volumes of business and general comparison with the cost of living. A feature of the booklet is the service record and salaries of the top executives, showing that many came up through the ranks and indicating that anyone from office boy to superintendent can aspire to head the company.

Explanations of the insurance, savings and loan plans of the various companies have gone far to dispel the opinion that some employes have entertained in the past that an oil company is a "soulless and bloodless" institution in which the "boss" is judge, jury and executioner.

Another field of public relations now being explored is broader participation in community activities. A dozen or more companies have distributed word to representatives in various districts that participation in civic enterprises of various sorts would be desirable. Emphasis has been placed on the desirability of shunning organized politics.

Plant and terminal superintendents are being urged to invite public inspection of properties. One company has started a program of inviting inspection of tankers whenever they happen to be in port.

Several companies are urging their dealers, irrespective of the size of their plant, to invite public officials, the press and school classes, to inspect facilities and see just how operations are carried out. This policy of public inspection is being extended through the producing fields and refining centers.

Messages on taxation, restrictive legislation, the modest earning record of the oil industry over a period of years, employe benefits and the almost incomparable progression of lower prices, improved quality and better service have been going to stockholders in the dividend envelopes of some companies for years. The dissemination of such material is being broadened by inclusion of brief pamphlets in monthly statements to customers using credit cards and through royalty and rental envelopes. Through operating organizations land men and title curative men are carrying messages to land owners contacted in the regular course of duty. The type of information given public distribution through land department operations usually consists of the amount of money paid property owners and wage earners during the year and what this money means to community economy.

The distribution of annual reports to employes is being practiced by several companies. Usually the reports are rewritten from those mailed to stockholders in a more understandable form and to emphasize the points in which employes are most interested. The relationship of capitalization per employe and the comparison of wages, taxes and earnings are some of the points featured. Other companies have not yet adopted the policy of distributing annual reports to employes for the reason that this medium of distributing information has not been practiced in the past and they feel the reaction might be unfavorable to launch such a program while the topic of public relations is uppermost. The fear is that employes may feel they are being "sold a bill of goods" and that such an abrupt departure from established practice would be untimely.

There has been a decided change recently in the attitude of several companies toward the press at large. Some companies are instructing their executive staffs in all parts of the country, from superintendents to vice presidents, to become acquainted with editors of publications within their areas and to make available news on its merits. In the cases of several companies the press relationship is a distinct reversal of policies effective for years. Still another field of public relations under exploration is the matter of public speakers. Some companies have definitely launched a program of training men within their organizations who are capable of appearing before groups of various sizes for discussion of the oil industry. Other companies are simply encouraging divisional public relations organizations to consider

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Station attendant handing a "gasoline tax dollar" to a motorist. The "dollar" is shaded to show the part that pays for gasoline and the part that pays for taxes

Recent Decisions and Commission Rulings on Gas

By WILLIAM A. DOUGHERTY
Standard Oil Co. of New Jersey

Court and commission decisions impinge upon the operations of the natural gas industry at so many points it is difficult to sort and segregate them to a limited approach. Possibly those decisions that have an immediate and direct effect on the treasury are the ones that result in sleepless nights for the management, so to that group I will limit my discussion.

This being a general meeting and not one of lawyers, I will do my best to avoid a legalistic discussion and will leave aside all questions except those that indicate some new or different or unusual application.

Rate regulation has continued to be of increasing importance to the natural gas industry. New and flush production make for cheap gas, but it is well understood in the industry that the cost of producing gas increases as fields become older. Unless new sources are available the gas company must charge more or earn less. No wonder then that rate controversies have arisen in large volume during the past decade.

Last year when the Natural Gas Section met at New Orleans there had not yet been passed the pending Lea bill regulating the transportation and sale in interstate commerce of natural gas. A few weeks thereafter the bill had become a law.[1] The F.P.C. promptly got into action, and on July 5, 1938, issued three orders. Order No. 51 instituted an investigation by a questionnaire to determine what companies and persons were natural gas companies subject to the act; Order No. 52 established provisional rules and regulations; and Order No. 53 required the filing of schedules by all natural gas companies, showing all rates and charges for any transportation or sale of natural gas in interstate commerce.

Thus began a new field of regulation and one which will be far-reaching in its effects. The law defines a natural gas company as any person or corporation "engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale."[2] No attempt is made to limit the application of the law to companies which generally are known as public utility companies, and that phrase is not used at any place in the law. The F.P.C. interprets its mandate from Congress as including every sale of natural gas for resale if the gas eventually moves into interstate commerce. While no decision of the commission has been rendered on the question, requests for the filing of contracts have gone to many producers of natural gas who own no pipe lines but who sell gas only in the producing field. Although the law provides that it shall not apply to the production or gathering of natural gas, a sale by a producer to a natural gas company which sells the gas in another state is considered by the commission as being within its jurisdiction.

Many producing companies which have been considered to be private enterprises are being requested to file their contracts of sale. If this broad jurisdiction is upheld and the right to fix the rates of all gas which is to move or has moved in interstate commerce is sustained, the business of producing and selling natural gas as a private enterprise is ended. No longer could an individual drill a well and sell the product to an interstate pipe line at a price negotiated between the parties. The price would be fixed in Washington. You can readily see that the importance of the regulation now being entered upon by the F.P.C. cannot be overemphasized.

The first public body to take advantage of this new law was the city of Cleveland. On July 6, 1938, there was filed with the F.P.C. a petition asking for an investigation into the rate charged for natural gas which the Hope Natural Gas Co., operating in West Virginia, sells to the East Ohio Gas Co., operating in Ohio. This was followed very shortly by a complaint of the city of Akron against the same company, and the commission later instituted a general investigation into all rates charged by Hope Natural Gas Co. in the sale of gas for resale.

A.G.A. — Presented before Natural Gas Section of the American Gas Association, Tulsa, May 8 to 11, 1939

In addition to this case, there are now pending before the F.P.C. these rate proceedings:

A complaint was filed by the Illinois Commerce Commission against Natural Gas Pipe Line Co. of America, and later the F.P.C. initiated what it termed a "sweeping investigation" of the company's rates.

The New York Public Service Commission filed a complaint against New York State Natural Gas Corp. respecting the rate charged the distributing company at Syracuse, N. Y. Later the F.P.C. initiated an investigation into all of the rates of this company.

A complaint was filed by the city of Denver against Colorado Interstate Gas Co. and Canadian River Gas Co. respecting the rate charged the distributing company at Denver. Shortly thereafter the Wyoming Public Service Commission filed a complaint against the Colorado-Wyoming Gas Co. respecting the rate charged the distributing company at Cheyenne. Subsequently the F.P.C. initiated a general investigation into all the rates of all three companies and consolidated all of the proceedings.

The rate charged by Arkansas-Louisiana Gas Co. for gas sold to Camden Gas Corp. at Camden, Ark., was protested by the distributing company and an increase in the rate provided for by the contract in effect before the Lea bill became a law was suspended by the F.P.C.

The Pennsylvania Public Utilities Commission filed a complaint against the rates of Pittsburgh & West Virginia Gas Co. for gas sold to the Equitable Gas Co. of Pittsburgh.

An investigation was initiated by the commission into certain rates charged by Interstate Natural Gas Co., Inc., to distributing companies in Louisiana.

Two proceedings involving rates charged for transporting gas are pending, one being an investigation by the commission of the rates charged by Manufacturers Light & Heat Co. for transporting gas from West Virginia into Maryland for delivery to the Cumberland & Allegheny Gas Co. The second proceeding was initiated by a complaint filed by certain producers in Montana against the rate charged by Montana-Dakota Utilities Co. for transporting gas from Montana to the Dakotas.

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WILLIAM A. DOUGHERTY

Mr. Dougherty began the practice of law in Cleveland, Ohio, being associated with the firm of Tolles, Hogsett & Ginn. Since October 1, 1933, he has been with Standard Oil Co. (New Jersey) in the law department. He devotes his time principally to legal matters of the natural gas subsidiaries of that company. He is also an officer of several of these subsidiaries. In his work he has had considerable to do with the activities of the natural gas industry in connection with the Public Utility Holding Company Act and with the Natural Gas Act passed last year. He has been in close touch with the activities of the various state commissions on natural gas matters and particularly the Federal Power Commission investigations.

Compressor station on Panhandle Eastern pipe line from the Texas Panhandle to Detroit and Indianapolis

NATURAL G

By PAUL RYAN
Chief Statistician, American Gas Association

One of the phenomenal industrial developments in the United States during the past few years has been the rapid expansion of the natural gas industry.

When man first discovered the existence of natural gas is unknown. At least 1,000 years ago the Chinese produced it from wells 2,000 feet deep, transmitting it through bamboo pipes and using it to evaporate salt brine and for domestic purposes. In Japan gas wells were known as early as 615 A.D. At an early date the city of Genoa, Italy, was lighted by gas from the wells of Anniamo, in Parma, and this was probably the first commercial use of natural gas in the then western world.

In the United States the presence of natural gas was detected in springs, in West Virginia, as early as 1775 and in 1815 it was produced from a salt well at Charleston, W. Va. In 1821 gas from a spring at Fredonia, N. Y., was accidentally ignited by a lantern, and near this spring, in the same year, the first gas well was drilled to a depth of 27 feet. The earliest authentic record of natural gas being used commercially in this country was on June 4, 1825, when it was used to light the town of Fredonia, N .Y., upon the occasion of the visit of General Lafayette. In 1840, natural gas was used near Centerville, Butler County, Pennsylvania, to evaporate brine in the manufacture of salt. This was probably the first instance of the use of natural gas for industrial purposes in the United States.

The first corporation formed in the United States to engage in the natural gas business was the Fredonia Gas Light Co., organized in 1858.

Development of the natural gas industry in the Appalachian field dates back to about 1870. In 1883, the Chartiers Valley Gas Co. was organized to bring gas to the mills and glass factories in Pittsburgh. Shortly after the year 1900 an expansion of the industry began in this area, and by 1910 practically all of western Pennsylvania, northern West Virginia and the entire state of Ohio were being served with natural gas from Pennsylvania, West Virginia, and Ohio fields. There grew up in these states a vast network of gas gathering, transportation, and distribution systems, which are still in service today.

In the Mid-Continent field, gas was first discovered in Kansas in 1873, but distribution to consumers did not begin until 1884. After that time, as new deposits were discovered various communities were served from nearby fields. In 1904 the gas distributors in Kansas consolidated their interests, forming the first important gas company in that state, known as Kansas Natural Gas Co. During this period, and principally after 1912, a number of gas systems were developed in Oklahoma, northern Texas, Arkansas, and Louisiana, until by 1925, the business had expanded into a large industry. The year 1925 marks the discovery of the two largest known gas fields, the Amarillo field in the Texas Panhandle and the Monroe field in northern Louisiana.

Today, towns and cities with a population of more than 32,814,000 people have available the innumerable conveniences afforded by this modern fuel, natural gas.

The automobile business has long been considered one of the basic of the great industries of the United States, affording employment to many thousands and manufacturing a product which has become essential to the complex industrial civilization of this country.

Yet the average person would probably be surprised to learn that the investment in the natural gas industry is more than double the amount of capital employed in the production of automobiles. While some $1,369,631,000 has been invested in the automotive plants of this country, over $2,700,000,000 of capital is required to provide natural gas service to the 7,220,000 customers of this great industry.

Approximately 66,000 people are employed by the natural gas companies of this country at an annual payroll in excess of $98,156,000. An interesting sidelight on the contribution of the gas industry toward improving living conditions for the workers engaged in supplying this essential service is indicated by the fact that, whereas in the peak year 1929 the average employe in the natural gas industry worked 49 hours per week, by 1937 this had been reduced to 40 hours per week, and yet his average weekly earnings for the 40 hour week were nearly 9 per cent higher than in 1929.

An important factor in this accomplishment, and in the maintenance of the high standard of service to which natural gas customers have become accustomed, is the tremendous amount of capital that stands back of each worker in the natural gas industry. For example, in the automobile industry, approximately $3,000 has been invested in plant and machinery for each worker employed. In the case of steel, this figure is about $7,000, while the railroads have an investment of approximately $24,000 for each employe. Yet the average worker in the natural gas industry has behind him the tremendous investment of $41,000.

One of the outstanding developments in the natural gas industry during the past decade and a half has been the expansion into territories and markets formerly served with manufactured gas.

In 1937 there were some 84 former manufactured gas companies distributing straight natural gas of approximately 1,000 B.t.u. to 1,991,911 cus-

NATURAL GAS SECTION COMMITTEE CHAIRMEN

Executive committee: Chairman, Thomas R. Weymouth, vice president, Columbia Gas & Electric Corp., New York.

Advisory committee: Chairman, Robert W. Hendee, general manager, Colorado Interstate Gas Co., Colorado Springs, Colo.

Natural gas sales and utilization committee: Chairman, F. X. Mettenet, vice president, Peoples Gas Light & Coke Co., Chicago.

Natural gas production committee: J. H. Dunn, general manager, Shamrock Oil & Gas Corp., Amarillo, Tex.

Natural gas transmission committee: Chairman, George M. Parker, manager, Mississippi River Fuel Corp., St. Louis, Mo.

Main technical and research committee: Chairman, H. C. Cooper, president, Hope Natural Gas Co.

Gas measurement subcommittee: Chairman, Thomas R. Weymouth.

Pipe line subcommittee: Chairman, Harry D. Hancock, Gas Advisers, Inc., New York.

Subcommittee on gas well deliveries: Chairman, N. C. McGowen, president, United Gas Pipe Line Co., Houston, Tex.

Subcommittee on conservation data: Chairman, E. P. Hindes, chief geologist, Cities Service Co.

Subcommittee on code for testing natural gas for gasoline content: Chairman, George P. Bunn, manager natural gas department, Phillips Petroleum Co., Bartlesville, Okla.

Special subcommittee on coefficients: Chairman, T. H. Kerr, vice president, Ohio Fuel Gas Co.

Subcommittee on pipe line crossings under railroad tracks: Chairman, Gordon M. Davidson, Natural Gas Pipeline Co. of America, Chicago.

Committee on supply men's fund: George E. Welker, president United Natural Gas Co.

Wrinkle committee: Chairman, John H. Schalek, Peoples Natural Gas Co., Pittsburgh, Pa.

Wrinkle award committee: Chairman, J. L. Foster, general superintendent, Lone Star Gas Co.

Natural gas conservation committee: Chairman, Floyd C. Brown, vice president, Natural Gas Pipeline Co. of America, Chicago.

Nominating committee: Chairman, R. W. Hendee, vice president, Colorado Interstate Gas Co.

Time and place committee: Chairman, Elmer F. Schmidt, vice president, Lone Star Gas Co.

GAS, AN EXPANDING INDUSTRY

tomers who purchased 154,099,849,000 cu. ft. of natural gas, or 1,540,998,490 therms, for which they paid $89,598,353, an average rate of 5.8 cents per therm.

COMPARATIVE DATA ON THE NATURAL GAS INDUSTRY

(1937-1938)

	1938	1937	Per cent change
Customers—			
Domestic (incl. house heating)	6,654,800	6,511,500	+2.2
Commercial	523,100	504,300	+3.7
Industrial	42,200	40,000	+5.5
Total	7,220,100	7,055,800	+2.5
Gas sales (M.c.f.)—			
Domestic (incl. house heating)	349,285,000	360,284,000	—3.1
Commercial	99,845,000	103,306,000	—3.4
Industrial	581,438,000	681,983,000	—14.9
Electric generation	170,039,000	170,567,000	—0.3
Total ind. and elec. generation	751,477,000	852,550,000	—11.9
Total	1,200,607,000	1,316,140,000	—8.8
Revenue (dollars)—			
Domestic (incl. house heating)	244,339,000	248,069,000	—1.5
Commercial	47,574,000	48,613,000	—2.1
Industrial and electric generation	127,561,000	146,537,000	—12.9
Total	419,474,000	443,219,000	—5.4

NATURAL GAS INDUSTRY IN THE UNITED STATES

(Miles of Main, 1933-1937)

	1937	1936	1935	1934	1933
Transmission	81,000	80,500	79,600	78,800	78,200
Distribution	101,000	98,500	95,400	94,200	92,800
Total	182,000	179,000	175,000	173,000	171,000

In 1923 these same companies were distributing manufactured gas of about 530 B.t.u. to 1,412,662 customers who purchased 60,458,813,000 cu. ft. of manufactured gas, or 320,431,700 therms, for which they paid $58,028,262, an average of 18.1 cents per therm.

In addition there were in 1937, 28 former manufactured gas companies serving mixed gas of approximately 840 B.t.u. to 1,771,841 customers who purchased 60,800,039,000 cu. ft. of mixed gas, or 510,720,328 therms for which they paid $66,489,987, an average rate of 13 cents per therm.

In 1923 this same group of companies sold manufactured gas of approximately 530 B.t.u. to 1,429,813 customers who purchased 63,459,320,000 cu. ft. of manufactured gas, or 336,334,396 therms, for which they paid $59,803,023, an average rate of 17.8 cents per therm. In other words, the number of consumers actually using gas in 1937, had they paid the rate of 18.1 cents and 17.8 cents, respectively, in force in 1923, would have had to pay $124,260,500 more for the equivalent service in 1937 alone.

In the 15-year interval from 1923 to 1937, manufactured gas has been replaced by natural or mixed natural and manufactured gas in communities with a population of nearly 19,800,000 people, and approximately 3,764,000 customers have been affected by the change. During this period natural gas has been made available to over 2,300,000 customers who had not previously been served with any gas fuel.

In considering this expansion of the natural gas industry, the question naturally arises of its relationship to other phases of the public utility business.

For example, it has been pointed out that in 1938 revenues of the electric utilities aggregated $2,172,750,000, while revenues of natural gas utilities were only $419,474,000. Such a superficial comparison, however, ignores some of the basic differences inherent in these two branches of the utility industry, and has been responsible for many of the erroneous conclusions concerning the relative status and functions involved in the supply of gas and electric energy.

For example, in 1938 the electric companies sold to consumers some 93,400,000,000 kilowatt hours. Reduced to a common denominator, or thermal basis, this amounted to 319 trillion British thermal units. During that same year natural gas utilities sold 1,203,553,000,000 cu. ft. of natural gas, which reduced to the same common denominator or thermal basis, amounted to 1,203 trillion British thermal units, or nearly four times the quantity of energy distributed in the form of electricity.

Reducing these astronomical figures to unit terms may perhaps make this point clearer. If a buyer were in the market last year for a million British thermal units of energy, he could purchase them in the form of natural gas for $0.35, and in the form of electric energy for $6.82.

It is doubtless for this reason that the electric industry is to an increasing extent, turning to natural gas as an economical and dependable method of power production. In 1938 approximately 173 billion cubic feet of natural gas were used as fuel for generating electric power. That is to say, nearly one-fifth of all the steam generated electricity of this country was produced by natural gas.

Preliminary estimates indicate that the total production of natural gas in 1938, including amounts used in the manufacture of carbon black and for field purposes, reached an all-time high of more than 2½ trillion cubic feet, or more than 2 per cent above the previous peak established in 1937.

Sales of natural gas for domestic uses, which are influenced to a considerable extent by temperature variations, registered a decrease, falling from 360,284,000,000 cu. ft. in 1937 to 349,285,000,000 cu. ft. in 1938, a loss of 3.1 per cent. This was to have been expected in view of the fact that the number of degree days (the gas industry's standard measure of weather conditions) for a group of the larger cities served with natural gas was more than 15 per cent below the previous year.

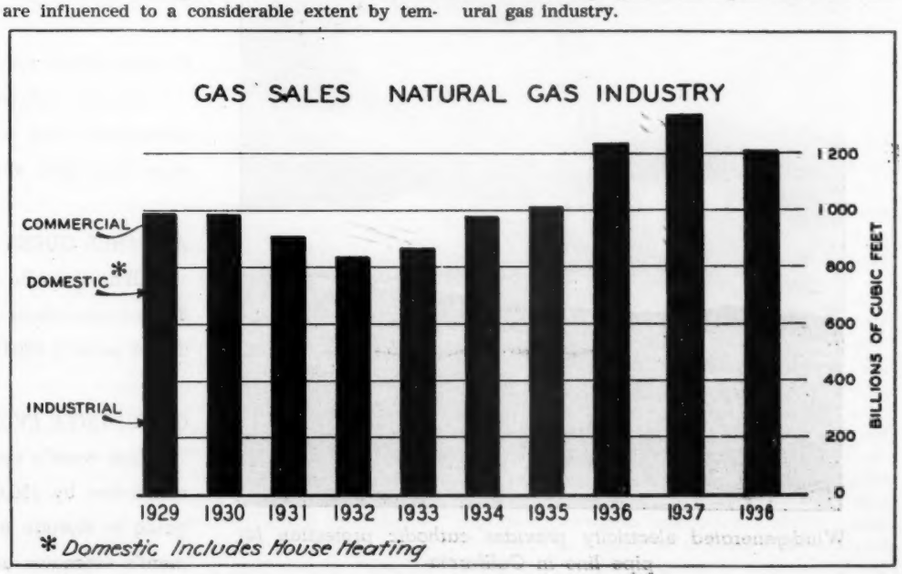
Sales of natural gas for industrial and commercial purposes in 1938, a year of marked industrial recession, also declined.

The first quarter of 1939, however, witnessed a definite upturn in all phases of the industry's activities. Preliminary estimates indicate that domestic sales were 12 per cent above the first quarter of 1938. Sales to industrial customers were up 6 per cent, while commercial sales gained 12 per cent.

That this upturn may be expected to carry through the year with increasing momentum is indicated by the results of a recent survey. Reports were received covering the utility characteristics of more than 104,000 one and two-family homes constructed in 1938, this group accounting for nearly 70 per cent of the entire number of one and two-family homes erected in the United States during that year.

Of the 104,000 homes reported on, 68,000 were in territory served with natural gas. For this latter group of new and modern dwellings, 90 per cent reported the use of natural gas for cooking. Eighty-nine per cent reported natural gas for water heating. Seventy-eight per cent used natural gas for house heating, while 10 per cent reported the installation of new gas refrigerators.

When it is considered that these dwellings represent the most modern conception of design and serviceability, it is evident that natural gas service has not only maintained but even enhanced its acceptance as an integral part of the home of tomorrow, and affords additional assurance of the continued progress and expansion of the natural gas industry.



SPARKS FROM THE NEWS

PLAY IN CLAY

Two new pools have accelerated the lease play in Clay County of North Texas. More wildcats are to be drilled.

PIPE LINE SPEED

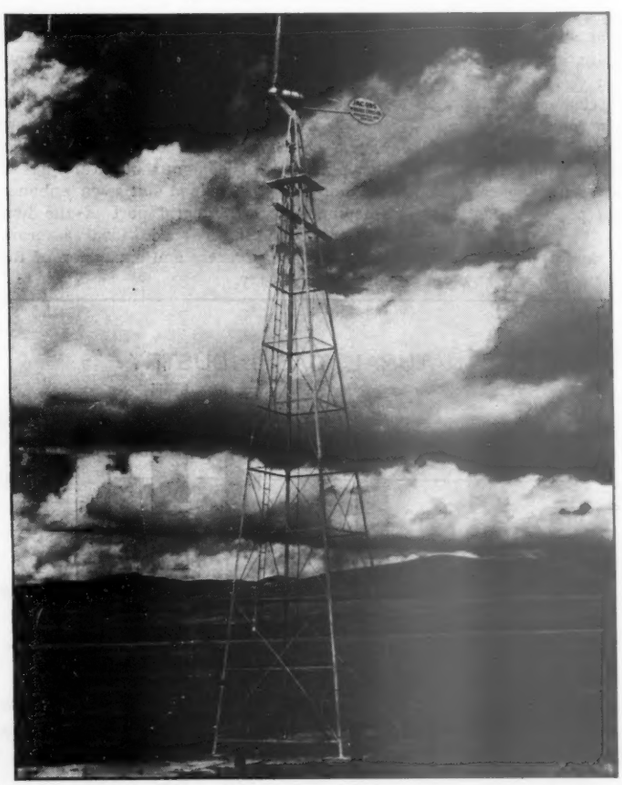
Contracts let last week call for completion of a 355-mile 10-inch line from Wood River, Ill., to Lima, Ohio, by August 1.

LESS ALCOHOL

Germany, principal proponent of alcohol motor fuel blends, plans to greatly reduce use of alcohol in the future. Poor performance is the reason.

AMICABLE SETTLEMENT

Conferences between California oil companies and Department of Commerce representatives may provide amicable settlement of marketing and proration practices now being investigated by Department of Justice.



Wind-generated electricity provides cathodic protection for pipe line in California

McCLOSKY IN KENTUCKY

Developments point to a McClosky lime pool in Daviess County, Kentucky. Depth is 1,417-22 feet.

SEARCH CONTINUES

Wildcats starting in four East Texas counties are proof that many believe there are other major reserves in that area.

FEAST NOT FAMINE

The industry's problems center around an excess rather than a shortage of oil A.P.I. Boyd, Jr., told the New Mexico Oil Conference.

ACTIVE IN ARKANSAS

The Magnolia field in Columbia County which is Arkansas's most active drilling area promises to be an important oil reserve.

STRIKE EFFECTS

The coal strike is increasing the demand for heavy fuel oils in the East while maritime strike with 75 tankers tied up is retarding shipments.

HOT AND COLD

It is difficult to visualize natural gas cooling a home as well as heating it. Progress in that development was a feature of the natural gas convention reports.

CLEANLINESS PAYS

Reports indicate that companies which have insisted on cleanliness and service at their dealer stations will obtain more than their share of the exposition-tourist business.

ANOTHER GUESS

Illinois' crude output reached 199,410 bbls. daily. With 82 new operations last week it is now apparent that the predicted peak of 200,000 bbls. was 25,000 or more barrels too low.

CONCLUSIVE EVIDENCE

Last week's crude production exceeded B. of M.'s recommendation by 150,000 bbls. daily. Latest reports show crude going to storage at rate of 185,000 bbls., sustaining Government's estimates as to demand.

Department of Commerce May Be West Coast Intermediary

By H. D. RALPH

WASHINGTON, D. C., May 8.—The announcement by the Department of Justice that it would shortly convene a grand jury in Los Angeles to investigate charges of antitrust violations by the petroleum industry on the Pacific Coast has stimulated interest in machinery for settling antitrust disputes without a criminal trial, and coincided with other antitrust developments in Washington.

In what may lead to a precedent in government regulation of business, officials and attorneys of several of the West Coast oil companies involved in the investigation are holding a series of conferences with officials of the Department of Commerce in an attempt to work out a mutually satisfactory solution of the case through a consent decree. The Department of Commerce, of course, has no legal authority to intervene or to effect a settlement of the case, but it is possible for the department to act as a "friend of the court" or a friendly intermediary in preliminary negotiations leading to a consent decree.

The use of some such machinery in settling antitrust cases has been suggested by Thurman W. Arnold, assistant attorney general in charge of the antitrust division, but no definite methods of procedure have been evolved. Presumably this would be one of the functions of the proposed bureau of industrial economics which the Department of Commerce has been seeking to establish. The idea of having another government department offer its good offices in an antitrust case originated in part out of the automobile finance case in Milwaukee a year ago when the antitrust division entered negotiations for a consent decree at the same time that a federal grand jury was considering a criminal indictment against the largest automobile finance companies. The federal judge, on learning of the negotiations, dismissed the grand jury and criticized the department on the ground that negotiations at such a time were improper.

Neutral View

The idea is that the Department of Commerce, Department of Agriculture, and other federal agencies have the public welfare no less in mind than the Department of Justice but since they are not directly concerned with enforcement of a criminal law and do not have the prosecutor's psychology they are in a position to take a neutral and objective view toward controversies between business groups and the Department of Justice, particularly where self-regulation of industry is concerned. Also, these other agencies have technical experts who understand the operations and problems of the industry and can be of very real assistance to the government attorneys and courts in advising on prosecutions and drafting consent decrees in order to make the antitrust laws of widest possible economic benefit. In the third place, these other agencies of the federal Government generally have the confidence of business men, and persons under indictment or investigation may feel free to lay their cards on the table and discuss possible methods of settlement without fear of disclosing their defense to the prosecuting officials.

In the current discussions between West Coast oil companies and the Department of Commerce it is understood the industry made some proposals which the department felt could not be accepted by the antitrust division but which were nevertheless taken under consideration.

While Washington awaited the long-promised and much postponed formal statement of Attorney General Frank Murphy on antitrust policies, Mr. Arnold made what may be an advance summary of the statement in an address before the convention of the American Trade Association executives held in conjunction with the annual meeting of the Chamber of Commerce of the United States. Characterizing the Sherman Act as America's contribution to economic legislation and as an essential referee in the game of competition, the assistant attorney general declared it can never be reduced to a rule of thumb and its administration requires the exercise of judgment in order to avoid rigid standards and definitions which will destroy the law itself. He promised to use the rule of reason and offered to confer with business men in working out plans for staying within the law, declaring:

Rule of Reason

"Most important in the constructive enforcement of the Sherman Act is the application of the rule of reason with respect to combination in restraint of trade. This rule of reason envisages three situations in which a rigid application of competitive standards is not possible. The economic necessities of a machine age require that we recognize three principles in the application of the law. These principles may be stated as follows:

"1. Combinations which actually contribute to the efficiency of mass production should not be destroyed.

"2. Concerted action on the part of groups of competitors in order to insure orderly marketing conditions should not be considered unreasonable.

"3. The third situation to which the rule of reason must be applied has been created by our lack of enforcement in the past. A short phrase to describe it would be to call it the problem of unscrambling the eggs. Where competition has been destroyed mere imposition of penalties does not re-create it. Economic dislocation in great industries must be avoided.

"An important part of our task is to facilitate compliance with the law by helping conscientious business men to understand them. The antitrust division has no right to direct business as to what practices it must adopt. There is, however, a pressing need of precedents to inform particular industries as to what practices they may do. The use of the consent decree for this purpose may be illustrated as follows: Suppose that the antitrust division brings a proceeding to prevent certain existing practices which are contrary to law. If the situation is one in which true competition is a sufficient solution the mere imposition of penalties will solve the problem. If, however, the problem is complicated by the necessity of some sort of combination or concerted action, business men are compelled by necessity to substitute new practices to fill the vacuum created by the abandonment of the old. It is absurd to withhold this information from business men as to whether the substituted practices will be approved. In such a case the department will submit to the court any plan voluntarily offered by defendants in an antitrust proceeding which furthers efficiency or orderly marketing conditions, or which may be necessary to avoid extreme economic dislocation, to obtain a decision on its legality. It will not suggest such a plan. It will not give advisory opinions to business. Consent decrees are only a means of terminating a litigated proceeding in an economic way. As such they may form precedents persuasive in similar cases. This much of a guide to business is an essential to any enforcement program."

Arnold Outlines Three Principles

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L. L. AUBERT, new president of the Oil Producers Agency of California, is general manager of Bankline Oil Co. and Norwalk Co. He is a graduate of Stanford University, and entered the petroleum industry in January, 1922, in the employ of General Petroleum Corp. He was engaged in drilling, producing, and refining operations until 1927, when he was assigned to the management of drilling, producing, refining and marketing operations.

KANSAS

THEO A. MORGAN, DIRECTOR of the oil and gas division of the Kansas Corporation Commission, announced on Monday that the allowable production in Kansas in May would be 170,350 bbls. per day. It was 156,850 bbls. in April. Bureau of Mines estimate of demand for May was 152,600 bbls. The order for May permits special allowables.

ILLINOIS

REGULATION OF THE ILLINOIS oil industry by a commission of three, which would include the director of the state Geological Survey and a representative of the state Department of Agriculture, was advanced by a director of the Independent Oil Operators of Illinois as a solution for Illinois' oil problems.

The director, G. H. Blankenship of Centralia, in an informal address to a group of independent producers and royalty owners in Centralia, said the legislation recommended by the association to the joint legislative committee investigating the oil industry contained these provisions:

1. Any pipe line company operating in Illinois would become a common purchaser and would take equally from all wells in the fields it serves.

2. Every operator would report to the state Geological Survey the results of each drilling operation, together with a log of the drilling showing depths of each formation and any other geological data on coal or other minerals.

3. Proration with a minimum restriction of 50 bbls. per well, each field to be prorated as a unit with greater daily protection where wells have greater productiveness.

4. The commission could not limit one well to more than 10 acres of lime production nor one well to more than 20 acres of sand production. Mr. Blankenship explained that some fields allowed no more than one well to 40 acres but that this restriction was not necessary in Illinois.

The association's plan also provided that at least one well could be drilled on any tract of less than 10 acres, but no more than one well on such a tract. If production control was based on one well to 10 acres, the owner of a well on a smaller tract could produce oil in proportion to the size of his tract, but would be allowed no less than 50 bbls. a day. For example, if a well on a 10-acre tract was limited to 200 bbls. a day, a well on a 5-acre tract would be limited to 100 bbls. a day, with a minimum of 50 bbls. on smaller tracts.

5. The proper plugging of wells to protect coal seams and oil formations and to prevent any stream pollution.

The commission, he said, would be appointed by the governor, subject to the approval of the general assembly.

The speaker indorsed production control as an avenue to end price cutting by small refineries.

Mr. Blankenship's plea for a conservation law that would include proration of production was strengthened by the fact that Illinois produced an average of 199,410 bbls. per day last week, which must have brought production on one or more days above 200,000 bbls.

CONSERVATION BILL NO. 999 and Ratable Taking and Common Purchaser Bill No. 1,000 were introduced in the Illinois House of Representatives Tuesday morning, May 9.

MICHIGAN

MICHIGAN'S DIRECTOR OF CONSERVATION last week began the exercise of his extensive and important powers of regulation over crude oil production in the state, his position as supervisor of wells being established by provisions of an oil control bill which became law with the affixing by Gov. Luren D. Dickinson of his signature to the measure.

Signing the bill, the governor asserted he was not impressed with protests that small producers would suffer hardships under provisions of the act, which had the support of legislators from the state's oil producing districts.

As the week ended, a legislative representative (Hale Tennant of Benton Harbor) charged that the governor had "reneged" on a promise to grant a hearing to farm leaders before deciding on whether he would sign the bill. Mr. Tennant represents a group of independent Michigan oil producers.

Later, the governor's legal advisor expressed Governor Dickinson's regrets, explaining the governor had forgotten the appointment and had not informed his staff of the plan.

Mr. Tennant claimed most farmers oppose the bill, believing it is designed to benefit the big out-of-state oil companies. The law provides that the conservation director will select an advisory board of six members, three representing the big companies and three the independent producers. The director and board will have authority to limit withdrawal of oil, and the number of wells to be permitted within designated areas and to enforce safety measures. P. J. Hoffmaster, the director, declared he believes the bill advantageous, and that it will help prevent waste of the state's oil resources.

STATE CAPITALS

OKLAHOMA

THE OKLAHOMA CORPORATION COMMISSION will clear up its proration docket in a two-day session this month. Operators of the Wilcox zone of the Oklahoma City field will meet at 2 p.m. on May 24 for discussion of potentials and revision of allowables. On the following day there will be a conference of producers and purchasers with W. J. Armstrong, chief conservation officer, at 10 a.m., for discussion of market demand and potentials. In the afternoon at 2 o'clock the commission will hold its market demand hearing for the June period, and will also hear petitions for rules for potentials in Class A and Class B pools.

TEXAS

THE PAST WEEK was a period of comparative inaction on the part of the Oil and Gas Division of the Railroad Commission of Texas, which was resting up after its strenuous endeavors to stabilize production in the state for the next two months.

Governor O'Daniel had not signed the bill continuing proration when this was written, but there was no fear that he would not do so. Little discussion was given to the proration or compact bills when they were before the legislature, and they passed both houses with no serious objections. Oil men are yet faced with the threat of proposal to amend the constitution to provide for a levy of a 2 per cent retail sales tax and for the increase of natural resource taxes 25 per cent to pay Texas' social security bill.

When the legislature met last January, talk in plenty prevailed that oil would be taxed heavily to help finance liberalized old-age pensions and a variety of bills supported the talk. However, with adjournment expected about May 20, extraordinary tax increases definitely have been blotted out of the picture.

PENNSYLVANIA

SEVERAL BILLS affecting the related oil and natural gas industries of Pennsylvania are under consideration by legislative committees.

Among these is H.B. 1009 which would set up spacing and production limitations for deep wells and is designated to conserve the natural gas resources of the state.

H.B. 1211 would require the filing of records showing the location of oil and gas wells and the geologic formations encountered. Such reports would be accompanied by a fee of $5 for preserving the records and obtaining samples.

H.B. 1282 would appropriate $50,000 for research work "intended to discover and determine additional sources of oil and gas."

H.B. 1213 would prevent the lapse of appropriations to the Department of Internal Affairs for the publishing of the results of surveys.

All these bills were introduced by E. Kent Kane of Kane.

House Bill 1009, introduced by Mr. Kane and referred to the committee on mines and mining, is entitled "An act declaring natural gas resources of the commonwealth to be of a migratory character easily subject to waste and dissipation, declaring the production thereof to be mining of mineral resources, establishing a system for regulating the reasonable removal thereof and placing the supervision thereof in the Department of Internal Affairs, providing a method of collecting and defraying the expense thereof."

ARKANSAS

ALLOWABLE PRODUCTION IN ARKANSAS in May will be 54,627 bbls. per day. It was 52,993 bbls. per day in April. The Arkansas Oil and Gas Commission recently established by act of the legislature, fixed the allowables and allocated the production.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Gas Expands

Developments reported at the annual meeting of the Natural Gas Section of the American Gas Association held in Tulsa this week leave no doubt that the natural gas industry is entering a new era of expansion.

This industry, with a long record of accomplishments, is on the threshold of a period in which its products will enable it to obtain new markets with outlets that easily may add 50 per cent to present sales within a few years.

Recent reports show how strong the industry is with its customers. During a period which has been characterized by more declines than advances in general business the natural gas industry has been able to retain most of its markets with several new outlets while competitive fuels were reflecting the recession in demand.

For instance, the number of customers last year actually exceeded the peak of 1937 with a reduction of only 5 per cent in dollar revenue. Sales to date point to new records in 1939.

The data show a steady increase, regardless of general conditions, in domestic sales which provide the greatest return per unit of volume sold. This is a reflection of the fact that natural gas, because of its cleanliness, convenience and comparative cheapness has established itself as a most desirable fuel in hundreds of thousands of homes where it has been made available.

This includes heating and light, with a widespread application in refrigeration and air-conditioning in the offing. Developments reported at the annual meeting indicated that the potential market in air-conditioning homes will provide a major market itself. Actual installations have shown that a combination operation will not only heat the home in winter but also enable the home owner to maintain air-conditioning at the desired low temperatures in the summer months. Modern trends in building leave no doubt that the home of the future will protect its owners against heat as well as cold.

The possibilities of this market are all the more welcome in that it will tend to minimize the seasonal variations in demand through furnishing a market for gas during the summer months, the period of minimum load for domestic consumption at the present time.

As in the oil industry, research and development are showing that the hydrocarbons found in natural gas can be made the raw material for the manufacture of a wide range of chemicals and other specialty products.

In its field operations the oil industry, through the application of repressuring and recycling, will provide a greater market for the natural gas industry in the future. Gas now often blown in the air will serve a useful purpose in increasing oil recovery.

All these developments, and many others, the full significance of which can be appreciated only by technologists, and close students of the industry, indicate that the natural gas industry occupies a far stronger position than ever before in regard to markets for its products.

As is the case with many other businesses, the gas industry faces the problem of governmental regulation, emphasized in the case of natural gas by the initial developments under the new federal natural gas act.

This regulation has proceeded far enough so that gas producers and distributors can well give consideration to the application of this law which is general in its provisions. Unless the industry cooperates and presents its position in full, there is danger of its being hamstrung by unwarranted regulations, some of which originate from producers of competitive fuels and are designed to curb the industry to the point where it will lose the advantages of many of the accomplishments it has brought about.

G. G. Oberfell, the 1939 recipient of the E. I. Hanlon award for distinctive service in the natural gasoline industry. The presentation was made by J. A. La Fortune. As a personal memento Mr. Oberfell was given an engraved watch and his name will be permanently affixed to the plaque which is shown here

Operating "Kinks" Natural Gasoline

By W. T. ZIEGENHAIN

Concluding its eighteenth annual convention in Tulsa the Natural Gasoline Association of America is able to record three days of unusually large attendance. A feature of the meeting was the review of 106 operating "kinks" submitted by field men, among which 30 prize winners were selected. During the convention the Natural Gasoline Supply Men's Association also met and chose new officers and elected directors to replace those whose terms have expired.

Other features of the meetings included the awarding of the E. I. Hanlon trophy to George Oberfell, vice president of the Phillips Petroleum Co. Unusual interest was also manifested in two sets of moving pictures shown by Dr. G. G. Brown of the University of Michigan and W. F. Fulton of the United Gas Pipe Line Co., each of which traced the phase relationship between liquid and gas for distillate produced at high pressures and on which the pressure is gradually released.

On the final day of the convention genuine enthusiasm was shown toward the selection of George P. Bunn, manager of natural gas and gasoline department for the Phillips Petroleum Co. as the new president to succeed J. A. La Fortune, vice president of the Warren Petroleum Corp. Upon his retirement, Mr. La Fortune was presented with a valuable golf bag and set of clubs, the presentation being made by T. R. Goebel of the Shell Oil Co., who said: "Joe took the job when it looked like there were but few problems to overcome. We know that many problems developed in the years during which he has served. We also know that Joe handled their solution unselfishly in his characteristically effective and profitable manner for the association and natural gasoline industry."

Calling the meeting to order, C. E. Brock, vice president of the Kansas City Light & Power Co., gave a brief statement of the work of the association and its accomplishments. He took the opportunity to recall the personalities of many men who have been active in the association and concluded by calling attention to the strong technical program that had been arranged for the convention.

His opening remarks were followed by the address of Mr. La Fortune as president and it too stressed the importance of the subjects that had been placed on the program for presentation and discusstion. Mr. La Fortune concluded by calling attention to the unusually effective cooperation the various members of all committees had shown toward making the convention a success and he contended this factor was the principal one to account for the success of the association. He was especially careful to call attention to the tireless work of W. F. Lowe, secretary. After this, Mr. La Fortune asked for the reports of the various committees and the first was read by R. E. Baker, of the Shell Oil Co., Inc., as chairman of the technical committee. (See Mr. La Fortune's address, issue of May 4, Page 23.) In part Mr. Baker reported:

"The chief interest of your technical committee during the past year has been directed toward the standardization of a method for low temperature fractional analysis. A preliminary study of this subject revealed that with the exception of certain efforts in California where a single standardization has been adopted by the C.N.G.A., there has been no cooperative work to determine the accuracy and duplicability of methods. It is the opinion of the committee that a single standardization will not suffice but that the procedure of fractional analysis must be modified with varying compositions and with varying objectives. Like the development of the Reid vapor pressure method, standardization of fractional analysis methods should be an evolutionary process and may extend over a period of years. In order to obtain the best results the situation requires cooperative rather than individual effort and cooperative effort requires time. As a first step a questionnaire covering apparatus, procedure and constants now used was prepared and sent out.

"The California Natural Gasoline Association has been very helpful and cooperative in furthering this program. They have furnished us with a compilation of data based on answers to a questionnaire parallel to our own sent to their membership. This compilation of data reveals much more uniformity of apparatus and procedure than does our own.

"Although the results of our survey reveal a great variation in apparatus and procedure, still they do not answer the questions as to relative accuracy and duplicability. These answers require additional work. A tentative outline of some of the steps that remain is as follows:

"1. Determination of the agreements and variations in results as obtained by present widely assorted practices.

"(*a*) Exchange of liquid and gas samples of widely varying composition.

"2. Determination of the accuracy of the various laboratories under present practices.

"(*a*) Circulation of synthetic samples of known composition.

"3. Standardization.

"(*a*) Comparison of procedural variables based on several samples of established composition.

"(*b*) Modification to improve precision, in (1) variations in composition, and (2) separation of isomers.

"In addition to the work done on fractional analysis, a number of other projects have received consideration. Octane test methods as recently revised by the C.F.R. committee and the position of natural gasoline with reference to motor fuel trends and refinery processes are two subjects covered in reports to your board of directors. It was pointed out that numerical values obtained by any method did not necessarily represent the true antiknock values as determined in actual road operation and that natural gasoline with its high inherent antiknock value in actual performance has a secure position of usefulness in motor fuels. Revision of the method for determination of vapor pressures of gasoline higher than the 26-pound product has been considered. This is being investigated in connection with a review of the present method for determination of the vapor pressure of liquefied petroleum gases. It is felt that A.S.T.M. Method D 323-38T might be revised to cover only products of 26-pound vapor pressure or less and that a new method should be written for lighter gasolines which might also apply to liquefied petroleum products."

Another technical problem before members of the association is that involving the relative safe-

GEORGE P. BUNN of Phillips Petroleum Co., newly elected president. J. R. JARVIS, Lone Star Gasoline Co.; RAY E. MILLER, Hanlon-Buchanan, Inc., and JAMES W. VAIDEN, Skelly Oil Co., were elected vice presidents

Feature Annual Convention

ty of transporting natural gasoline. While the problem is looked upon as one involving the manufacture of the material through the control of its vapor pressure, the association apparently feels that new developments in this matter come more directly under the jurisdiction of the traffic committee. N. R. Lindsay, chairman of the committee, outlined the work of his group as follows: "On January 9, 1939, a communication was received in the association offices from the Bureau of Explosives which outlined the hazards involved in the shipment and handling of inflammable liquids, and attached thereto was a list citing numerous instances where serious and near serious accidents had occurred. Blame in most cases was placed on defective tank car equipment or careless handling practices. The letter also proposed a requirement that 'all tank cars authorized for shipment of inflammable liquids having vapor pressures in excess of 16 pounds per square inch, absolute, at 100° F. be required to provide means of loading, sampling, taking temperature, gauging and unloading without allowing any vapor or liquid to the open air.' This suggestion was accompanied by a drawing of such a dome cover to permit these operations.

Avoid Tankcar Change

"On February 8, 1939, the traffic committee held its first meeting to discuss the whole question. Present in addition to committee members was a representative of the Bureau of Explosives, also representatives of various tank car companies. It was agreed at that time that the proposed dome cover would cost approximately $450 per car installed and that such an expense was entirely unwarranted. It was also decided that a preliminary survey of outage losses should be made and other suggestions for eliminating them should be presented at the next meeting.

"This meeting was held March 8, 1939. Present as invited guests were two representatives of the Bureau of Explosives as well as representatives of tank car companies; a representative of a manufacturer of unloading equipment and a representative of a refining company who had developed similar equipment for his company. The equipment presented was considered, but additional time was requested for further study by the committee. Subsequently another meeting was held March 29, at which the following conclusions were reached:

"1. The cost of installation of any of the dome equipment designs so far submitted seems prohibitive. These costs range from $185 per car to $450 per car. Even though these costs were materially less, the committee questioned whether savings in outages and freight rebates would warrant the expense involved.

"2. Outage surveys conducted by individual companies indicate that most major losses occurred in shipments to small blenders rather than to refiners. One large refiner reported actual innage for an annual average. Losses are attributed to carelessness, ignorance of unloading technique or downright design.

"3. While admitting the hazards involved in venting of cars, particularly within city limits, the committee believes that if proper unloading technique was followed much of this hazard could be eliminated.

"4. The committee is also of the opinion that outage losses could be greatly reduced if loading and unloading regulations were carefully followed and enforced by the proper authorities. It is believed that this can be done without any mechanical changes on many tank cars now in service and with but minor changes on others.

"It was developed during these meetings that the inspectors for the Bureau of Explosives contended that the regulations now in effect gave them no jurisdiction or police powers for the unloading of inflammable liquids which had been placed on consignee's properties for unloading, claiming that in these instances, transportation had ceased.

"With all of the above in mind, the committee fails to agree with the Bureau of Explosives that elaborate new dome covers are necessary or that they will prove to be the solution to the problem. In any case, a widespread and continued educational campaign for safe handling practices is essential and appears to be the only real means for bringing about the desired results. Such a campaign without adequate policing by proper authorities would fail of its purpose. Your committee recommended to the board of directors of this association that immediate steps be taken to prevent the promulgation of a new regulation requiring all tank cars to have the proposed expensive equipment; that the Bureau of Explosives be asked to cooperate in an educational campaign for all consignees and consignors of natural gasoline that they be given police powers for

Grand Prize—Operating Kinks Session

THE VACUUM DRIP

By A. H. WILKINSON
Skelly Oil Co.

The vacuum drip is designed to empty drips on vacuum lines, and is especially adaptable to drips that are not located close enough to residue lines for blowing by pressure. In many known cases vacuum line drips are located in sandy creeks, ravines, and in places inaccessible by cars which carry pumps or other equipment used in emptying drips.

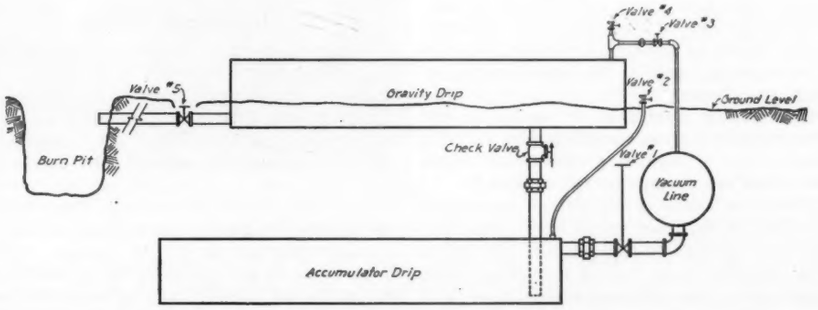
In describing the vacuum drip references will be made to the accompanying sketch.

The drip consists of two drip bodies or chambers. The lower drip is installed in the regular manner. Fluid from the vacuum line is collected in this lower drip as it would in any ordinary drip. The upper drip body is installed above the ground level at height sufficient to allow the fluid which is lifted from the lower drip to flow by gravity from the upper drip to the burn pit or sump.

The upper drip is connected to the lower drip by means of a nipple riser which extends to the bottom of the lower drip. A check valve allowing fluid to flow upward from the lower drip to the upper drip is installed in this riser nipple as shown by the sketch.

The operation of emptying the drip is as follows: When the lower drip is collecting fluid from the vacuum line, valves Nos. 1 and 3 are open and valves Nos. 2, 4 and 5 are closed. Close valve No. 1 which will prevent fluid or air from being drawn back into the vacuum line. Open valve No. 2 which permits atmospheric pressure to be applied to the fluid in the lower drip. Due to the vacuum which exists in the upper drip the atmospheric pressure will force the fluid from the lower drip up through the riser nipple and into the upper drip. After the fluid has been raised from the lower drip to the upper drip, close valve No. 3 and open valve No. 4. The upper drip is now at atmospheric pressure. The check valve closes preventing fluid from flowing back into the lower drip. Open valve No. 5 and the fluid will gravity from the upper drip to the burn pit or sump. After the upper drip has emptied, close valves Nos. 2, 4 and 5 and open valves Nos. 1 and 3 and the process of filling the lower drip is resumed.

An existing vacuum of 4½ inches of mercury will be sufficient to lift a column of water 5 feet in height, which in practically all cases will be the maximum lift required.



Members of the Natural Gasoline Supply Men's Association who attended the election of new officers. Included here are W. F. Lowe, secretary; L. S. Allen, National Tank Co.; J. A. Lupfer, Worthington Machinery Corp. of Oklahoma; G. W. Probst, Clark Bros. Co.; D. E. Fields, Tulsa Boiler & Machinery Co.; A. J. Kerr, Pittsburgh Equitable Meter Co.; J. H. Satterwhite, Wescott & Greis, Inc.; W. D. Moorer, Moorlane Co.; D. W. McKay, Cooper Bessemer Corp.; A. V. B. Candler, National Supply Co.; M. F. Waters, Hanlon-Waters, Inc.; R. E. Walker, American Rolling Mill Co.; C. S. Simons, Midwest Piping & Supply Co.; T. J. Robinson, American Rolling Mill Co. (Houston); C. A. Mathey, Mathey Machine Works; C. W. Wood, Mason-Neilan Regulator Co.; D. A. Leach, Chicago Bridge & Iron Co.; H. F. Goodnough, Refinery Supply Co.; C. D. Peterson, Fisher Governor Co.; R. T. Roberts, Goulds Pumps, Inc.; H. M. Rosevear, Wyatt Metal & Boiler Works; W. T. Ziegenhain, The Oil and Gas Journal; O. F. Cozier, National Petroleum News; W. B. Whenthoff, Tube Turns, Inc.; Joe McReynolds, Vinson Supply Co.; F. J. W. Wetzell, Ingersoll-Rand Co.; A. F. Canada, Goulds Pumps, Inc. Officers of the association for the new year are A. J. Kerr, president; W. W. Woobank, first vice president; L. S. Allen, second vice president; George W. Probst, treasurer; W. F. Lowe, secretary, and Roberta Hughes, assistant treasurer

enforcement of handling regulations if they do not already have them and that your committee be empowered to proceed at once with the compilation of a loading and unloading code, to give this code wide publicity and to seek the cooperation of other organizations such as the American Petroleum Institute and Western Petroleum Refiners Association in the solution of the whole problem. On April 4 the board of directors approved this recommendation, empowering the traffic committee to proceed as outlined, and report to the board of directors for further action."

In their order, reports of the gas testing committee and the gas contract committee were read. R. D. Turner, of the Skelly Oil Co. and chairman of the former, reported the detailed work which his committee was doing in reducing the pulsation of gas flow to improve metering. (See issue of May 4, page 67). As chairman of the latter committee, E. C. LeFevre, of the Cities Service Co., reported on the progress of the standardization work with which the association has long been identified.

Polymerization

Recognizing the gradual rise in motor fuel octane values and the desire to maintain a safe margin of octane blending value for natural gasoline the association included on its program several papers involving the ideas of a large number of companies on the subject. One of these was presented by F. B. Mack of the Shamrock Oil & Gas Co. (see issue of May 4, page 60) which described the catalytic polymerization of butane, while D. W. Wilson of the M. W. Kellogg Co. presented one with the title "Applications of Thermal Polymerization." The latter paper was the result of work done jointly by engineers and operators in the Humble Oil & Refining Co., Phillips Petroleum Co. and the M. W. Kellogg Co. Included in the paper were flow charts and a resume of operating data for each of five plants. The presentation was viewed as a distinct feature of the meeting. Included as a part of the paper are the following conclusions:

"1. A general discussion of various design modifications of thermal polymerization has been presented. Five different flow sheets were included and these were compared and analyzed.

"2. Relative values of butane and propane as polymerization unit feed stocks were considered. Yields and product quality values are given. Among saturated feeds, butane is of most value, isobutane next, then propane, while ethane is of no value. The gasoline produced is of premium quality, the 400°-e.p. product at 10 pounds R.v.p. having a clear octane A.S.T.M. of 78.

"3. Some consideration is given to the general operation of polymerization units as evidenced by actual operating results. Usual shutdown and maintenance duties are outlined as well as length of runs and time efficiency to be expected.

"4. For the Baytown unit, a description of flow is given as well as a table of economics for the plant. Based on a butane charge of 8,000 bbls. per day, a 400°-e.p. poly gasoline value at 6 cents, a plant capital write-off of 10.5 years butane is calculated to have a value of 1.615 cents per gallon in the feed tanks at the poly plant.

"5. Similarly, for the unit at Borger, Tex., of the Phillips Petroleum Co., description of flow and operating conditions are given as well as economics applying at this location. Economics of Borger operation indicate a butane value of 0.602 cent per gallon, with a gasoline value of 5 cents.

"6. Suggested design is given for thermal polymerization to be used at natural gasoline plants. This includes consideration of size of plant, butane and propane as feed stocks, and use of existing plant facilities. General economics are given for one case in which 400 bbls. per day of 10-pound R.v.p. 400°-e.p. poly gasoline are produced from 40,000 gallons of butane charge. It is indicated for this illustration that in a three-year capital pay-off, that butane ranges in value from 0.36 cent per gallon with poly gasoline at 4 cents per gallon to 1.21 cents per gallon where the 10-pound R.v.p. 400°-e.p. poly gasoline has a value of 6 cents per gallon."

Prepared discussions of these papers were read by C. R. Williams of the Continental Oil Co. and W. W. Scheumann of the Cities Service Oil Co., after which there was an open discussion of the general subject from the floor of the convention.

The Outage Problem

Under the chairmanship of R. A. Carter of the Continental Oil Co. the meeting heard an equally important operating problem discussed by J. R. Jarvis, of the Lone Star Gasoline Co., namely, excessive outage losses claimed by customers of the natural gasoline industry. Mr. Jarvis itemized the claims made against one company and these totaled $48,015 in one year. These included outages and freight rebates on these outages and averaged $5.36 per car for the company cited.

Recognizing the characteristics of natural gasoline as having a direct bearing upon the nature of the finished motor fuel blend, Harold M. Trimble and Harold I. Hoover of the Phillips Petroleum Co. reported the results when blending a wide variety of products. The experiments were conducted with primary attention given the octane value of the finished blend and the results clearly indicated the optimum conditions under which natural gasoline may be used to effect most economical results.

Gas Contracting

A third problem of major importance and one which is constantly before the natural gasoline members is that of gas contracting. The association has acted as the medium for the work although the results of standardizing forms, etc., have influenced and benefited the entire industry. James E. Allison of Hanlon-Buchanan, Inc., gave an unusually complete analysis of trends and suggested possible further improvements in the procedure of gas contracting.

Kink Sessions

Under the chairmanship of G. W. McCullough of the Phillips Petroleum Co. almost a full day was given over to the presentation of operating ideas by the field men. As stated previously 106 ideas were given among which 30 were classified as prize winners. These winning kinks will be described in detail together with pictures or drawings in early future issues of The Oil and Gas Journal.

Safety was also given recognition in the program for operating men and a practical discussion of the work was given by L. E. Hardy of the Skelly Oil Co.

Public Relations

In a most forceful manner, Ray E. Miller, of Hanlon-Buchanan, Inc., called the attention of operators to the need for improved public relations on the part of men in the oil business. He stressed the fact that oil company employes are sufficient in numbers to carry favorable publicity of the oil industry into every section of the country. He asked that each man establish a systematic plan of contacting a definite number of people daily for the purpose of disseminating facts regarding the importance of the oil industry. He concluded "It is our business to do this."

Entertainment

The Natural Gasoline Supply Men's Association provided the entertainment for the convention. This year a well-attended dance at the Tulsa Club proved to be a feature of the convention. On Thursday and Friday noon lunches were served at the Tulsa Hotel by the supply men.

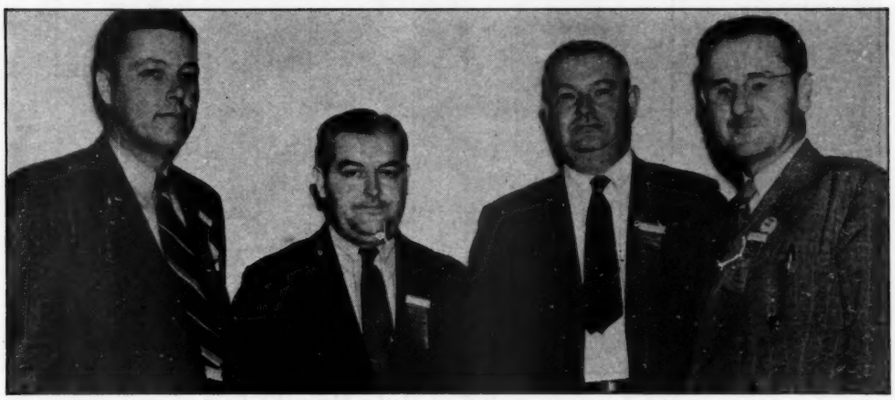
Petroleum Industry Electrical Associations Meet in Houston

HOUSTON, Tex., May 8.—D. W. Sims, superintendent of the telephone and telegraph department, Continent Pipe Line Co., Ponca City, Okla., was elected president of the Petroleum Industry Electrical Association at its annual convention May 3-5. Mr. Sims, who was vice president, succeeds E. M. Smith, superintendent of the telephone and telegraph department, United Gas Pipe Line Co., Houston. Other officers elected were: O. V. Summers, superintendent of the telephone and telegraph department, Texas Pipe Line Co., Houston, vice president, and J. F. Collerain, superintendent of the telephone and telegraph department, Houston Pipe Line Co., Houston, secretary.

The Petroleum Electrical Supply Association, auxiliary organization, meeting in conjunction with the Petroleum Industry Electrical Association elected G. G. Griffin, Dallas, district sales manager of Crouse-Hinds Co., Syracuse, N. Y., president, to succeed George J. Freeman, Houston, Texas Creosoting Co.; J. H. Jamison, Houston, district manager, Square D Co., vice president to succeed Mr. Griffin, and Tom B. Jones, Dallas, district sales manager, Ohio Brass Co., secretary, to succeed Tom Conrad, Graybar Electric Co., Tulsa. More than 250 persons were registered for the convention, considered one of the largest and most instructive held by the associations. Both associations voted to hold their next convention in Dallas May 1-3, 1940.

Papers and discussions dealt particularly with problems of the electrical branch of the petroleum industry, and developments in equipment and appliances, and their applications. Specially timely and creating much discussion was a paper on "Applications of Electrochemistry to Cathodic Protection," by Dr. Scott Ewing, American Gas Association research associate, National Bureau of Standards, Washington, D. C.

Doctor Ewing has spent more than a year in laboratory research in an effort to determine a standard for measurement of potentials as a basis for more effective and adequate application of cathodic protection to pipe lines. His paper, illustrated with charts and drawings, was largely a report of his studies and conclusions. One phase of his study was to determine how reliable copper sulfate electrodes are in their use in measurement of potentials, and also to find an electrode that would react as nearly as possible the same as the iron in the pipe. He discussed various electrodes with which he had worked, concluding none was found as effective as the copper sulfate electrode. However, there was no electrode that would react the same as iron.



Newly elected officers of the Petroleum Industry Electrical Association: D. W. Sims, Continental Oil Co., Ponca City, president; J. F. Collerain, Houston Pipe Line Co., Houston, Tex., secretary; O. V. Summers, Texas Pipe Line Co., Houston, vice president, and E. M. Smith, United Gas Pipe Line Co., Houston, Tex., retiring president

A purpose of the study was to reduce the measurement of potential differentials to a closer margin or more accurate basis. It was found, he stated, that there was no standard of potential to be used as a basis for cathodic protection. Instead potential readings have variations affected by temperature, chemical reaction of different soils, and other factors.

Other papers included "Structural and Inductive Coordination," by E. B. Jennings, foreign wire relations engineer, Southwestern Bell Telephone Co., Dallas; "New Lighting Tools for Tomorrow's Jobs," by Samuel G. Hibben, Westinghouse Electric Manufacturing Co., Bloomfield, N. J., and "Protection of Human Lives and Property — Hazardous Locations — Prevention of Fire and Explosions," by C. W. Gustafson, Mutual Fire Prevention Bureau, Chicago. A. J. Bolmer, National Board of Fire Underwriters, Chicago, presented a sound film showing testing of equipment throughout the laboratories of the National Board of Underwriters. Mr. Gustafson paid special attention to conditions in the petroleum industry demanding the use of fire and explosion-proof electrical fittings and equipment. He stressed the importance of proper installation of wiring, fittings and equipment, adequate maintenance and frequent inspection.

Mr. Jennings dealt with the problem of interference experienced in the use of two or more telephone lines of different companies using the same poles, and discussed structural means of correcting it. Mr. Hibben demonstrated various means of obtaining light, showing the work and research being done in developing new kinds of light, and uses of light.

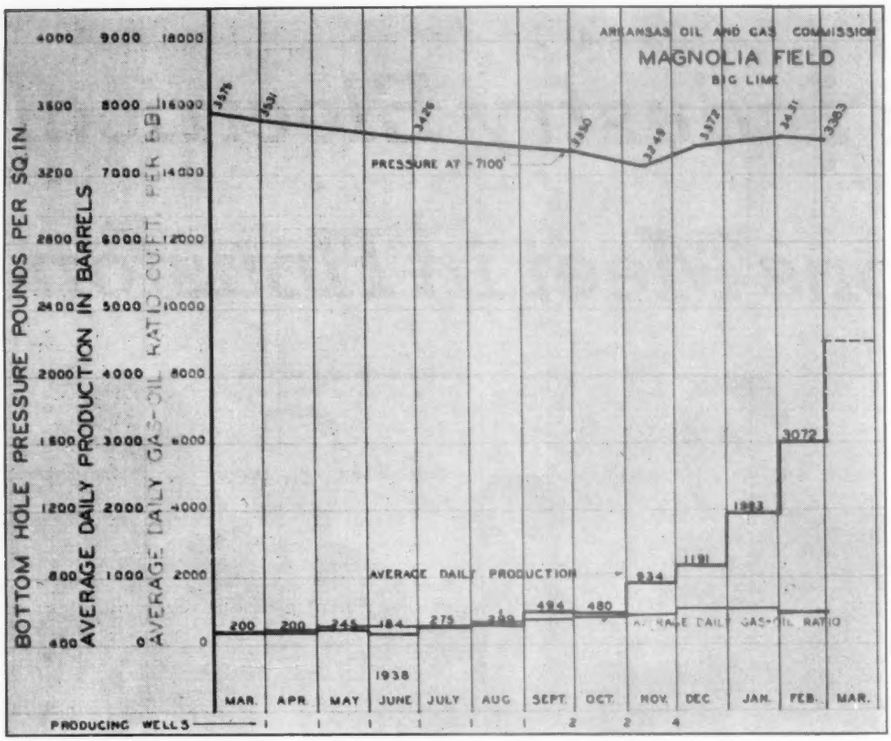
Newly elected officers of the Petroleum Electric Supply Association: Tom B. Jones, Ohio Brass Co., Dallas, Tex., secretary; G. G. Griffin, Crouse-Hinds Co., Dallas, Tex., president; J. H. Jamison, Square D Co., Houston, Tex., vice president, and George J. Freeman, Texas Creosoting Co., Houston, Tex., retiring president

Seventy-five Tankers Tied Up by Maritime Dispute

NEW YORK, May 8.—The dispute between the National Maritime Union and the four tanker-owning companies, Standard Oil Co. of New Jersey, Tide Water Associated Oil Co., Socony-Vacuum Oil Co., Inc., and C. D. Mallory & Co. remains unchanged, the union insisting on a clause in the new contract providing for a "hiring hall" and the companies equally insistent not to yield the power of selective hiring. It is estimated that about 75 tankers, divided among the four companies, are out of service. Union crews have walked ashore from 100 boats since the strike was called April 17, but replacements have since taken out at least 25 tankers on their regular voyages.

The N.M.U. announced in New York last week that the National Labor Relations Board had issued a decision in Washington beneficial to its cause. The labor board examiner recommended that three companies, Cities Service Oil Co., Pure Oil Co. and Texas Co., be ordered to issues passes to union representatives permitting them to board tankers operated by the three concerns.

At Houston, Tex., Petroleum Navigation Co. was added to the companies affected by the strike when crews of two tankers, the Federal and the Papoose, left their ships after docking at Houston terminals the past week. The former was tied up at the General American docks and the latter at the Sinclair Refining Co. docks. So far tankers of the other four companies affected by the strike which have docked at Gulf Coast ports have been able to clear with new crews.



Production control chart of the Magnolia field

Steepest Structure Found in

By GEORGE WEBER

The steepest dip yet encountered in the Smackover lime formation characterizes the north flank of the Magnolia field of Columbia County, Arkansas. Currently the most active drilling area in the state, the pool is also the largest yet developed in the deep lime trend of South Arkansas.

Magnolia, or Kerr-Lynn was discovered last year by a wildcat located on the extreme north edge of oil production. Had the well, Kerr-Lynn Oil Co. No. 1 Barnett, been located 100 feet further north, it would probably have been a dry hole, and the field might not have been discovered for many months.

The early history of Magnolia, before the considerable thickening of the porous lime to the south was discovered, was disappointing. Three tests, drilled to the east and west of discovery, were abandoned last September within a few days of each other, and interest in the area immediately dropped. However, operations to the south later showed a thickening of about 1 foot in every 8, and interest revived strongly.

At the present time there are 16 producers and 11 rigs in the field, and much additional geologic information is being gained each week. The structure is apparently elongated to the east and west, with a steep northward dip, and, as indicated by recent well data, a more gradual dip to the south beginning about a mile from the north edge of production.

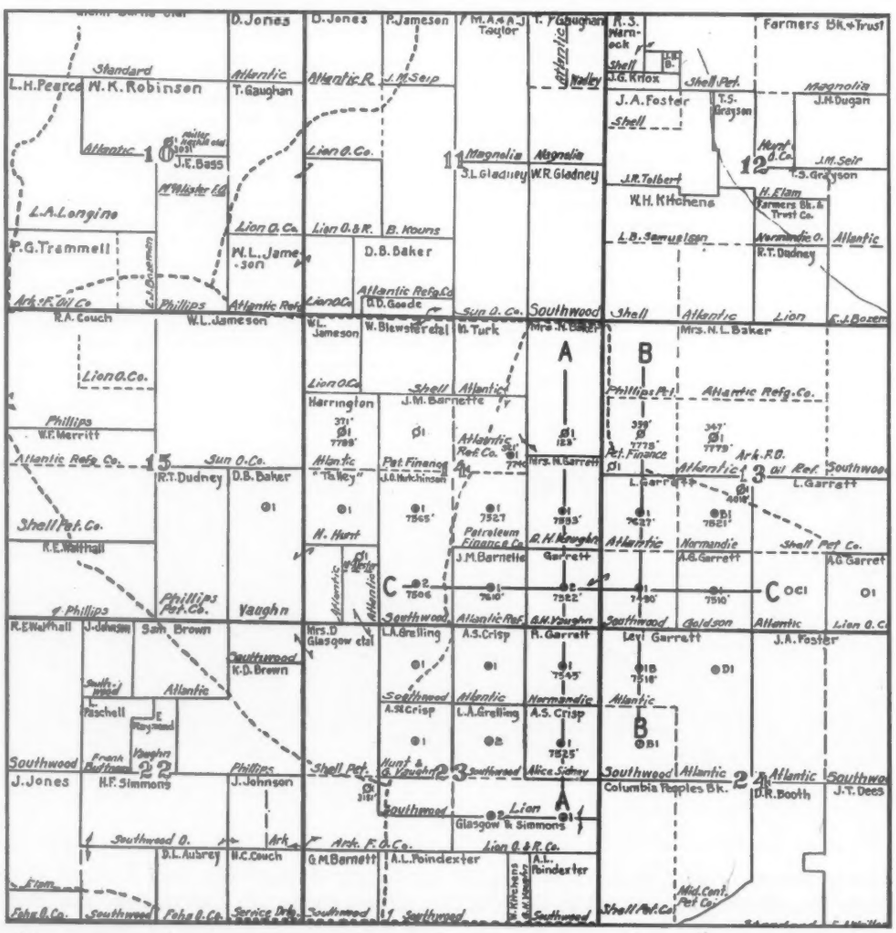
The producing formation is porous oolitic lime, underlying a thin section of dense lime in the top of the Smackover member. An extensive gas cap covers much of the reservoir already developed, with a gas-oil contact established at —7,132 feet. The top of the water level has been determined at —7,334 feet giving an indicated maximum oil section of 200 feet in several of the wells completed to date.

Little is known at this time, of the uniformity of the porous lime section, since only those tests on the north, beyond the producing limits, were carried to the water level. Studies are under way at present, to determine the porosity, permeability and uniformity of the lime, in an effort to arrive at reserve estimates for the field.

Three sections of the Smackover lime, plotted on equal vertical and horizontal scales, show the trend in the lime in north-south and west-east directions. The north-south section A-A, extrapolated at its northern edge by estimates from the tops in adjacent tests, best illustrates the thickening of the structure, and the indication of the southward dip. The other north-south section B-B shows a similar profile. As indicated, the west-east section C-C taken through the center of the field as now developed shows the lime extending in a fairly level trend. This indicates that the field, as ultimately developed may take on an elongated east-west shape, with steep dips to the north and possibly the south, along its length.

The subsurface information from other wells, not shown graphically in the sections, conforms to the general picture of the structure, as illustrated in the accompanying table.

As the most advanced development to date in the Smackover lime of South Arkansas, Magnolia offers the best structural index of what may



Magnolia field

Dip in Smackover Lime in Magnolia Field

be expected in fields of this type in the future. The trend will probably yield further discoveries in that formation, since geophysical exploration has located many additional Smackover highs in Columbia and adjacent counties. The field differs from those already under development, in the pronounced dip, and in the extent of its indicated reserves.

Another factor, and an important one to consider in Smackover fields, is the permeability of the porous lime. Magnolia, judging from the initial and potential production of its wells, has a good permeability as compared with other fields of the area. It is possible that that characteristic of the lime may show improvement to the south and east, since lime tests on the north and west edges of the trend have either failed to produce oil or have shown lower potential production due alone to lower permeability in the lime.

The Magnolia field is given a daily allowable of 6,300 bbls. by the Arkansas Oil and Gas Commission for the month of May. This represents a 100 per cent increase over the production allocation for March, and the further development of the field may be expected to continue the increasing part which the field is playing in South Arkansas flush production.

The average reservoir pressure in the pool has dropped 171 pounds from an original pressure of 3,575 pounds to an average of 3,404 according to the April survey. The same period saw a cumulative production of 268,715 bbls. of oil and 574,079 cu. ft. of gas. The average gas-oil ratio in April was 841 cu. ft. per barrel, a relatively low figure, since all wells have been drilled through the gas cap on structure, and the section is successfully cased off. As in all lime fields to date, the field has a very active water drive, and the relation of water and gas drive, and the possible future migration of oil under extended production, will make an interesting study, useful in determining production and proration methods for lime fields.

MAGNOLIA FIELD—COLUMBIA COUNTY, ARKANSAS

(All depths subsea)

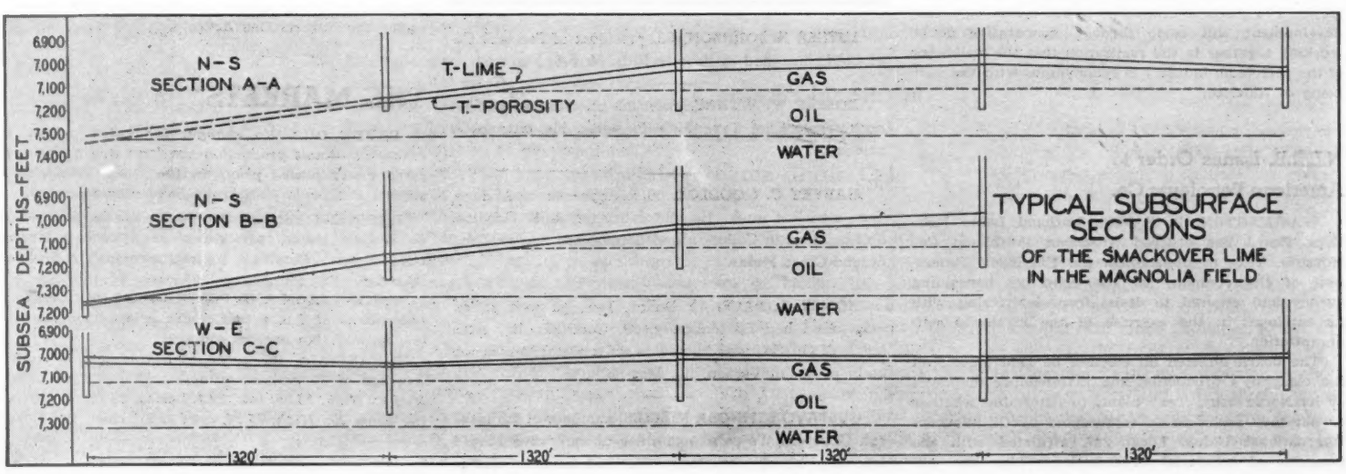
Company—	Lease:	Well No.	Elev.	T. anhy.	T. lime	T. por. lime	Total depth
Alice Sydney Oil Co.	A. S. Crisp	1	303	.....	—7,033	—7,057	—7,219
Atlantic Refining Co.	F. Barnett	1-B	337	—7,011	—7,046	—7,069	—7,273
Atlantic Refining Co.	J. M. Barnett	1-A	321	—7,151	—7,277	—7,314	—7,419
Atlantic Refining Co.	Mrs. N. L. Baker	*1	347	.....	—7,359	—7,403	—7,432
Atlantic Refining Co.	A. S. Crisp	1	361	.....	—6,997	—7,027	—7,238
Atlantic Refining Co.	L. Garrett	1-A	363	—7,063	—7,156	—7,185	—7,264
Atlantic Refining Co.	L. Garrett	1-B	285	.....	—6,993	—7,031	—7,225
Normandie Oil Corp.	L. Garrett	1	325	—6,944	—6,987	—7,027	—7,220
Normandie Oil Corp.	L. Garrett	1-B	337	.....	—7,183	—7,219	—7,246
Petroleum Finance Corp.	Mrs. N. L. Baker	*1	359	.....	—7,351	—360	—7,416
Petroleum Finance Corp.	J. M. Barnett	1	321	—7,053	—7,138	—7,168	—7,241
Southwood Oil Co.	A. C. Garrett	1	328	—6,974	—7,030	—7,044	—7,182
Southwood Oil Co.	L. Garrett	1	322	—6,978	—7,032	—7,055	—7,226
Southwood Oil Co.	J. O. Hutcheson	1	249	—7,049	—7,129	—7,159	—7,216
Southwood Oil Co.	J. O. Hutcheson	2	336	.....	—7,017	—7,044	—7,190
G. H. Vaughn	L. Garrett	1	302	—6,957	—7,018	—7,044	—7,220
G. H. Vaughn	N. Garrett	1	333	—7,084	—7,159	—7,181	—7,219
Atlantic Refining Co.	Harrington	*1	371	.....	—7,335	—7,380	—7,418

*Dry holes. Gas-oil contact —7,132 feet; oil-water contact —7,334 feet.

April brought a new basis on which Magnolia proration is based. Together with all other flush fields, excepting Miller County, the pool is now produced on an acre-pound allocation basis. The bottom-hole pressure of each well is multiplied by the acreage allotted to that well, and the sum of all such products for the field is divided into the total field allocation for the barrels-per-acre-pound factor.

In comparison with the former basis of 50 per cent on acreage plus 50 per cent on pressure, the new method tends to increase the allowable of the higher bottom-hole pressure wells, and to decrease the figure for those with lower pressure readings. At the hearing recently held in El Dorado, an acre-foot-pound basis, taking into consideration the thickness of oil section in each well, was suggested as a basis for determining individual well allocations. This method was considered, but declined in favor of the straight acre-pound basis for the time being. It was announced, however, that the present status of allocation will be continued for about 90 days, and at the end of that time the adoption of the oil-sand thickness may be reconsidered and approved. While an acre-foot-pound basis would represent a relatively equitable method of proration, it is agreed by many that unitization of the entire field production, with allocations to the computed oil in place for each individual lease would represent a more accurate and equitable rating for all operators. This method would aid in sustaining the reservoir pressure should the gas cap expand downward and increase the gas-oil ratio of those wells bottomed nearest the top of the porous section. Production from wells located near the flanks of the field, and shutting in or deepening of high gas-oil ratio wells, with equalized allocation on the acre-foot basis would prolong the flowing life of the reservoir.

Under present proration methods, wells in Magnolia are limited to a gas-oil ratio of 2,000 cu. ft. per barrel. Those wells which exceed that ratio will be allowed to produce what is termed the "gas limit," or that volume of gas equivalent to the volume obtained by multiplying the daily oil allowable on the acre-pound basis by 2,000 cu. ft. This ruling will tend to correct production rates in wells which may in the future go to large gas-oil ratios, and it is expected that the field's overall ratio will not become excessive.



Stover Made Secretary-Treasurer of Gaso Pump

Howard F. Stover, purchasing agent and assistant to the late L. D. Armstrong for 19 years, has been appointed to succeed him as secretary-treasurer and manager of the Gaso Pump & Burner Manufacturing Co. Tom H. Flanagan, sone of T. J. Flanagan, president of the company and a member of the organization for five years, assumes Mr. Stover's former position.

Mr. Stover is a native of West Virginia, his family moving to Tulsa in 1908 when he was seven years old, and he received most of his education in Tulsa schools. His first job was with Gulf Oil Corp. in its warehouse department and was followed by service in the war. After the war he became associated with Sinclair Pipe Line Co. in its materials department, leaving in June, 1920, to accept an opening with the Gaso company.

During his years as purchasing agent, Mr. Stover advanced to a position of leadership in that field. He has served as president of the Tulsa Association of Purchasing Agents and on the board of directors of the National Association of Purchasing Agents.

In succeeding Mr. Armstrong he will have complete supervision of manufacturing and of the company's domestic and export sales. The established manufacturing and sales policies of the company will be continued without change.

Tom H. Flanagan, who becomes purchasing agent and assistant to Mr. Stover, received his education at Kemper Military Academy and Tulsa University, and started with the company in 1934, spending more than a year as a mechanic in the shops. He was then moved to the office as assistant to Mr. Stover.

The Gaso organization is otherwise unchanged. T. J. Flanagan continues as president, M. J. Flanagan as vice president and general manager, I. C. Hughlett as plant manager, R. L. Jaeger as chief engineer, Russell Peoples, as shipping clerk, H. A. Wienecke, Jr., as sales representative for Oklahoma, Kansas, Illinois, Indiana and Michigan, G. W. Dreyer as sales representative for Texas, Louisiana, Arkansas and New Mexico, and A. V. Simonson as New York export manager.

HOWARD F. STOVER *TOM H. FLANAGAN*

New Mexico Oil Conference Hears Boyd and Fell

ALBUQUERQUE, N. M., May 6.—Dealing effectively with a sufficiency of oil, rather than a shortage, is the present and prospective problem of the petroleum industry, W. R. Boyd, Jr., of New York, executive vice president of the American Petroleum Institute, told the New Mexico Oil Conference here today. He said the nation's petroleum reserves now are the greatest in history and urged the industry be permitted to enjoy the cooperation of the Government in promoting petroleum conservation and orderly operations rather than be subjected to political control.

Harold B. Fell, executive vice president of the Independent Petroleum Association of America, said: "I believe that it will require only a few of the next 50 years to gear our economics to our technology. That development will come through cooperative action working together in the realization that the well-being of the petroleum industry is synonymous with the well-being of America."

N.L.R.B. Issues Order to American Petroleum Co.

WASHINGTON, D. C.—The National Labor Relations Board has ordered American Petroleum Co., Houston, Tex., to disestablish the Employes' Federation of the company as the collective bargaining agency and ordered to desist from interfering with its employes in the exercise of the rights to self-organization.

The board directed an election be held among all the company's production and maintenance employes at its Norsworthy, Tex., plant, to determine whether or not they desire to be represented by Oil Workers International Union, Local 227, affiliated with the Congress of Industrial Organizations. Pipe line employes will be included in the voting unit, but office and clerical employes, foremen, straw bosses and other supervisory employes will be excluded. The company was ordered to post notices for 60 days stating it will comply with the board's order. The board dismissed charges that the company had refused to bargain with the Oil Workers Union. The record disclosed insufficient proof the union had been designated as a collective bargaining agent by a majority of the employes.

Obituaries

LUTHER H. JOHNSON, 53, president of Pennzoil Co. of California, died at Beverly Hills, May 6.

ROBERT W. WYNNE, Palestine oil man, was killed near Centerville, Tex., May 5, when his automobile skidded.

HARVEY C. GOODLOE, 60, oil operator of Abilene, Tex., died last week. He and a brother, A. S. Goodloe, had holdings in Callahan and Shackelford counties and around Cross Plains.

HOMER A. PACE, 43, Dallas, Tex., oil well driller, was killed and Ed Malroney, 33, Centralia, Ill., scout for Shell Oil Co., was injured in an automobile collision north of Mount Vernon, Ill., May 4.

GUSTAVO ESPINOSA MIRELES, manager of the Mexican Government's petroleum sales agency, died May 4 following an appendectomy. He had been in charge of sales of oil from the foreign properties expropriated March 18, 1938. He was former governor of the State of Coahuila and was private secretary of the late President Carranza.

IVAN GUBKIN, 68, vice president of the U.S.S.R. Academy of Sciences, died recently in Moscow. Two years ago he was the author of an extensive report before the World Congress of Geology meeting in Moscow in which he said Russia's oil supply of 882,700,000 reserve tons was the second largest in the world.

Mid-Continent Strike Hearing Scheduled for May 15

Trial of 99 strikers in common pleas court, Tulsa, started this week on a county grand jury indictment charging them with unlawful assembly at the refinery when the strike of the International Oil Workers Union began against the Mid-Continent Petroleum Corp. on December 22, 1938. Five indicted strikers not present are regarded as fugitives from justice. Formal hearing is to be held by the National Labor Relations Board at the Federal Building in Tulsa on May 15.

Nomad Chapters Planned For Tulsa and Houston

Preliminary plans have been completed for the formation of chapters of Nomads at Houston and Tulsa. The organization was launched in Los Angeles recently by representatives of oil supply and manufacturing companies who have been outside the United States in the interest of their organizations. Active membership in the organization will be confined to those who have visited foreign fields and refineries in sales work.

The Houston and Tulsa units will be patterned after the Los Angeles chapter. The organizations will provide social and educational meetings at regular intervals. Entertainment of visitors connected with foreign oil operations will be another function of the organization.

E. L. Decker, Martin-Decker Corp., Long Beach, is president of the Los Angeles chapter. Rex Hamaker, vice president of Reed Roller Bit Co., Houston, has been elected temporary chairman of the Houston unit and Fred E. Cooper, Allis-Chalmers Manufacturing Co., Tulsa, is in charge of the Tulsa organization. Permanent organizations with charter memberships will be completed in the near future.

Missouri Rates Appealed To Power Commission

A petition filed by the Missouri Public Service Commission with the Federal Power Commission seeks an investigation to determine adequate rates for natural gas in the 56 communities served by eight units of the Cities Service Gas Co. The petition says gas is purchased at around 8 cents per 1,000 cu. ft. in Texas, Kansas, Oklahoma or elsewhere and sold to the distributors for 40 cents per 1,000 cu. ft., which price is declared to be excessive, unreasonable and unlawful under the Natural Gas Act.

THE MARKETS*

CRUDE OIL: *No changes in posted prices. Increase in Illinois production has increased quantity offered under posted prices in that state. Situation in several California fields considered unsatisfactory.*

REFINERY: *Strongest products are the heavy fuels in eastern states, partly owing to coal and maritime strikes. Gasolines slightly stronger in Mid-Continent.*

TANK-WAGON AND POSTED DEALER: *Advances in gasoline at few points where prices have been below normal. No general changes.*

FINANCIAL: *Oil stocks lag behind general market. Average of 30 representative stocks for week ending May 3: High, 25.09; low, 24.12; close, 24.79. Week ending April 29: High, 25.24; low, 24.21; close, 24.50.*

**Detailed information in market section.*

INTERNATIONAL

Mene Grande Line Likely to Move Oil Early in September

Due to the speed with which the first 30 per cent of Mene Grande Oil Co.'s 16-inch pipe line has been completed, it seems assured that first oil from the Oficina district in eastern Venezuela will be loaded over the new dock at Guanta not later than September 1. The first 25 miles of the 100-mile line were completed on April 15, two weeks after contractors started the project. Construction was started from the Guanta terminal of the line and work is proceeding toward Oficina. As the haul of material lengthens, the pace of construction is expected to fall below that accomplished on the first 25 miles. However, there is little doubt that the entire project will be available for service on or before September 1.

Contract for construction of the tanker loading dock at Guanta was awarded to Frederick Snare Corp. A dredge for removal of a part of a coral reef flanking the shore line is now en route from Peru to Guanta and this work will proceed simultaneously with pipe line construction.

The Guanta terminal is to be equipped with four loading tanks each of 139,000 bbls. capacity and four storage tanks each having capacity of 97,000 bbls. The loading tanks are being equipped with floating roofs and are located at elevations varying from 100 to approximately 150 feet. Loading will be directed through a 24-inch line and manifold. Because of the vacuum which might be developed in a tank with ordinary roof in the event of vent failure or screen clogging. Mene Grande engineers decided to install the floating roof type of construction. The large loading tanks have been located in depressions or valleys in the foothills back a short distance from the seacoast to facilitate construction of fire walls.

Due to the natural slope from the Oficina end of the line to Guanta, falling from approximately 500 feet to nearly sea level in the 100 miles, Mene Grande is installing only one pump station at the intake. The single Diesel-powered station will be sufficient to deliver 100,000 bbls. of crude per day at Guanta. The capacity can be increased to 160,000 bbls. per day by installation of additional pumping equipment. The line being built by Mene Grande, subsidiary of Gulf Oil Corp., passes within a short distance of producing wells completed and drilling tests now active in the Santa Ana area and also within a few kilometers of Standard Oil Co. of Venezuela No. 1 El Roble, which is being redrilled after a blowout at 9,605 feet. Redrilling is proceeding below 9,000 feet on the El Roble well which gave assurance of commercial production by its performance when the blowout occurred late last December.

There are approximately 15 completed wells in the Oficina district and three strings of tools are active at the present time. The Oficina district was first considered as a commercial oil field as early as 1934, although the distance from marketing facilities compelled owners to prove existence of substantial reserves before expenditures for a long pipe line could be justified. Several producing horizons have been proven in the field in the vicinity of 5,500 to 6,000 feet and deeper.

Mene Grande Oil Co. is now constructing a complete camp at Oficina, including water supply, electrical generating plant, housing accommodations for a substantial staff, sewage disposal system, recreation facilities, machine shops and buildings for equipment stock. It is estimated that the camp alone will cost approximately $2,000,000.

Germany Shifting From Alcohol to Ethyl Fluid Blend

The uneconomic compulsory admixture of ethyl alcohol to motor fuel in Germany is to be abandoned. Facilities for blending tetraethyl lead with motor fuel are being expanded in Germany and before the year is ended the partial relinquishment of ethyl alcohol productive capacity for nonfuel purposes will be completed. The plan for reorganizing the existing system of compulsory admixture of alcohol in motor fuel is intended to be "definitive" in character and to solve Germany's alcohol-motor fuel problem by establishing stability in blending requirements, according to the report from the American consul at Frankfort-on-Main distributed by the U. S. Bureau of Mines.

Under the plan the German motor fuel market will be divided into two major distributing districts, north and south of an imaginary line running east and west across the country from Bentschen to Bentheim. The northern distributing area accounts for about one-third and the southern area, including the former Austria, for about two-thirds of Germany's total motor fuel consumption. In the southern area the existing legal requirement of the blending of alcohol with all light motor fuel will be completely abolished and will be replaced by the required admixture of tetraethyl lead as antiknock agent instead of alcohol. In the northern district the admixture of alcohol in light motor fuel will continue to be required, at least temporarily.

Reorganization of the motor fuel blending requirements will cause a sharp contraction in the German consumption of alcohol for motor fuel purposes, about two-thirds of the present levels. Originally designed as a financial aid to distressed potato farmers by creating an artificial market for their excess potato crops at an inflated price, alcohol was established in 1930 as a legally required admixture with light motor fuel. The rate of admixture was originally fixed at only 2½ per cent, but was progressively raised to 10 per cent. With increasing difficulty of procuring adequate supplies of alcohol for motor fuel purposes, the rate of admixture of ethyl alcohol was reduced. To stretch the ethyl alcohol supply, methanol was increasingly called upon as a required component of the alcohol admixture. Substitution of methanol for ethyl alcohol reduced the quality of motor fuel. During the fiscal year of 1937-38, Germany's alcohol admixture requirements called for 2,392,400 hectoliters, or about 6,315,936 gallons. Of the 2,392,400 hectoliters of admixture required for the fiscal year 1937-38, a total of 1,594,900 hectoliters was ethyl alcohol and the remainder methanol. Germany's alcohol consumption for all purposes during the same period totaled 4,056,800 hectoliters. The ethyl fluid, of a grade designated as "Q" suitable for automobile fuel blending, will consist of 63.3 per cent of tetraethyl lead, 25.8 per cent of ethylene dibromide, 8.7 per cent of ethylene dichloride, and small amounts of other ingredients. The compound is manufactured exclusively by the concern Ethyl G.m.b.H., with headquarters in Berlin. One-half of the capital of this concern is controlled by the I.G. Farbenindustrie A.G., of Frankfort-on-Main and the other half by Ethyl Gasoline Corp. The company will market its output to consumers and distributors who have entered into special contractual relations.

The price of antiknock agent "Ethyl fluid" at present is 1.2 reichspfennigs ($0.0048) per cubic centimeter, f.o.b. works at Gapel-Westhavelland. The blending will be restricted to a maximum of 0.4 cc. per liter (1.5 cc. per U. S. gallon) of gasoline, or an amount sufficient to give the motor fuel an octane number of at least 74. Its incorporation in motor fuel will represent an increase in cost of the latter of 0.48 reichspfennig per liter ($0.007 per U. S. gallon), equivalent to around one-third the cost of the existing requirement of alcohol blending. It is understood that, despite differences in cost, retail prices of gasoline fuel in Germany will be unaffected by this shift from alcohol to ethyl fluid.

Colon Development Prepares to Explore Western Venezuela

Colon Development Co., Ltd., is preparing to explore portions of its western Venezuela concession bordering the Barco concession of Colombia on the east. A road from the Los Manueles field in the Tarra area to a point directly east of the Colombian Petroleum Co.'s Petrolea field, a distance of approximately 18 kilometers, about 30 miles, is 50 per cent complete.

A heavy duty rig has been ordered by the company for exploring the zones found productive at Petrolea, and the first test on Colon property is expected to be started during the latter part of this year. Efforts to reach the equivalent of Petrolea's producing horizon, the Cretaceous, at Tarra, are now under way. Colon No. T-93 is reported drilling below 7,000 feet.

Estonia Increases Its Production From Shale Oil

A total of 142,000 metric tons of crude shale oil and 16,000 tons of gasoline were produced in the four retorting plants of Estonia in 1938 compared with 112,000 tons of crude oil and 14,300 tons of gasoline in 1937. The production of oil shale rose from 700,000 tons in 1937 to 1,450,000 tons in 1938. Two new plants, one state owned and one of the Swedish "Oil Consortium," began operations, so that the production in 1939 can be estimated at 200,000 tons of shale oil and 19,000 tons of gasoline. The state-owned "First Estonian Oil Shale Industry, Ltd.," which can at present treat 70,000 tons of crude oil in its plant, has begun the preliminary work to erect a new retorting plant with an annual production of 30,000 tons of oil. The process will undergo only slight alterations; yet even finer oil shale is to be retorted. To accelerate the tempo of the production of oil shale, operations in the state-owned mines are at present being electrified as fast as possible.

Pipe Line Activity

Lion Oil Refining Co. Extending Its Pipe Line

EL DORADO, Ark.—Lion Oil Refining Co. April 1 began construction of an extension of its pipe line facilities from the Schuler field to the Kerlynn field, near Magnolia, as a further step in the development of its oil properties in Columbia County, Arkansas. A 6-inch pipe line is being laid over a distance of about 14 miles and will have direct connections with the company's refinery at El Dorado through the Lion pipe line now in operation between there and Schuler.

The company has approximately 4,000 acres under lease in Columbia County of which about 1,300 acres are in the Magnolia village area. It is now drilling three wells in the Magnolia field and plans an extensive development campaign there.

President T. H. Barton said that while the size of the Magnolia field was not known, it gave promise of being highly productive because of the thickness of the oil sands.

Cathodic Protection Units Planned by Phillips

The Phillips Petroleum Co. plans cathodic protection installations on an 8-inch line at the following locations:

N half SW quarter Section 22-34s-15w, Barber County, Kansas; Salt Fork River near Hardtner.

N half SW Section 29-28n-20w, Harper County, Oklahoma; Cimarron River, near Buffalo.

SW quarter Section 31-26n-24w, Harper County, Oklahoma; North Canadian River, near Laverne.

Section 62, Block 46, H.&T.C. Survey, Hutchinson County, Texas; South Canadian River, near Borger.

SW quarter Section 6-21s-15e, Coffey County, Kansas; near Burlington.

SE quarter Section 10-21s-15e, Coffey County, Kansas; near Burlington.

NW quarter Section 10-25s-5e, Butler County, Kansas; near Eldorado.

NE quarter Section 27-26s-1e, Sedgwick County, Kansas; near Wichita.

Sinclair Prairie Lets Contract For Walnut Bend Line

FORT WORTH, Tex.—Sinclair Prairie pipe line division of Sinclair Prairie Oil Co. has announced and let contract for the construction of a 15-mile line out of its Walnut Bend field of Cooke County, North Texas. Contract was let to Mitchell-Stewart Construction Co. and work will start immediately on the line, which will extend from Windsor Switch 4 miles north of Gainesville, southwest to Muenster, connecting with the 8-inch line extending into Fort Worth to the company's refinery. The trunk system can feed the refinery from 5,000 to 8,000 bbls. of oil daily, Fort Worth officials report.

Contracts Let for Laying Socony-Vacuum Line

Contract for the building of Socony-Vacuum Oil Co. $5,000,000 10-inch pipe line from near East St. Louis, Ill., to Lima, Ohio, has been divided among three construction companies. T. R. Jones, Inc., of Dallas, Tex., will lay the east 112 miles of the 355-mile carrier. Sheehan Construction Co., of Tulsa, was awarded contract on the central section of about the same distance and Whittiker Construction Co., of Fort Worth, Tex., the west section.

The line is being built under the supervision of Magnolia Petroleum Co., subsidiary of Socony. Work is to start immediately on all sections and completion is scheduled by August 1.

The western terminal will be at Mitchell station, near the Socony East St. Louis refinery. Two 55,000-bbl. tanks are being built at that station to handle crude bought and produced by Magnolia in Oklahoma to be moved to that point over Sinclair Refining Co.'s system.

At Patoka in southern Illinois, an 11-mile 10-inch line will be built south to Sandoval, where connection will be made with Magnolia gathering system in the Salem-Lake Centralia area. Other lateral lines are expected to be built. Two 80,000-bbl. tanks are to be constructed at Patoka.

Built primarily to furnish crude for Socony refineries at Trenton, Mich., and Buffalo, N. Y., the new carrier will have a maximum capacity of 40,000 bbls. daily.

Shell Pipe Line Co. Starts Work on West Texas Line

FORT WORTH, Tex.—Shell Pipe Line Co. has started work on a 6-inch line from its Hobbs, N. Mex., station to the Wasson-Denver pool in Gaines and Yoakum counties of the North Permian basin of West Texas. It is the third line to go into the area, which now is being served by only Humble Pipe Line Co. Aloco Pipe Line Co. line into the basin area, now under construction, is the other. Construction on the Shell carrier, which requires the laying of 33 miles of pipe, is expected to be completed by July 1, at which time relief will be provided for all unconnected wells in the large field.

Plains Pipe Line Co. Starts Slaughter Field Line

FORTH WORTH, Tex.—In the Slaughter field of Hockley County, Plains Pipe Line Co. has started laying its 4-inch line from Levelland to the field. Completion of the line, which will extend into the Duggan field, is expected by July 1, about which time an affiliated company (Motor Fuels, Inc.) will complete its new 4,000-bbl. combination skimming and cracking plant at Levelland.

Port Arthur Reduction

PORT ARTHUR, Tex.—Residential and commercial gas rates will be reduced about 5 per cent in Port Arthur June 1, according to a new rate submitted by Peoples Gas Co. and approved by the city commission.

Refinery Expansion

New Nebraska Refinery to Install Cracking Equipment

The new combination delayed coking and cracking plant to be built at Scottsbluff, Neb., by Terry Carpenter, Inc., will operate under license from Gasoline Products Co., Inc., it was announced. The license for the cracking plant has been signed and Gasoline Products Co. in cooperation with the M. W. Kellogg Co. is furnishing the process design for the plant. The cracking plant will have an initial capacity of 600 bbls. per day of crude. It is designed to run on Lance Creek crude and will be built by the L. S. Gregory Co., of Tulsa. It is stated that this plant will embody many of the basic principles employed in the extremely large combination coking and cracking equipment recently built under Gasoline Products Co. license. A range of low-pour gas oils is to be made in addition to gasoline and a marketable grade of coke. Construction is scheduled to start early this month and is expected to be completed during August.

Ark-La-Tex Division of A.P.I. To Hear Talk on Steel

The regular monthly meeting of the technical group of the Ark-La-Tex division of Western Petroleum Refiners Association will be held on Friday, May 12, 1939, in Shreveport, La., at the Washington-Youree Hotel, beginning at 4 o'clock p.m. At this meeting there will be an illustrated talk, entitled "Carbon and Alloy Steel Castings for Refinery Service," by D. Zuege, technical director of Sivyer Steel Casting Co., Milwaukee, Wis., The speaker will trace the history of the steel foundry industry, and the gradual development of the steel founding art. Consideration will be given to molding and metallurgical improvements in recent years. However, the major part of his talk will be devoted to a discussion of various steels used in the refinery. There will be a discussion of the manufacturing of refinery fittings as a distinct division of the foundry work.

Phillips Will Expand Borger Refinery

Within a period of 60 to 90 days the Phillips Petroleum Co. will start on an expansion of present facilities at its Borger refinery. The expansion work will include the construction of a new reform and rerun still and other plant additions. Additions and improvements will also be made to the present gas reversion still and gasoline recovery plant. The utility facilities and water equipment will be expanded. This work will provide temporary employment for several hundred men for a period of from six months to a year and arrangements have already been made with local construction men to take care of the additional men to handle the job. Upon completion of this program the company expects further improvement in the quantity and quality of its products.

Agreement Reached Regarding Montana Refinery Facilities

Through arrangements concluded with the Producers Refining Co. and the Glacier Production Co., both of Montana, Socony-Vacuum Oil Co., Inc. will supply in the State of Montana and vicinity products manufactured from Montana crude.

The refinery now being built by the Glacier Production Co. at Cut Bank is to be enlarged, so that crude supplied by the Producers Refining Co. will be processed under the supervision and control of Socony-Vacuum engineers for the manufacture of Mobilgas and other Mobil products.

The arrangement covers a minimum period of five years and a minimum quantity of 1,000 bbls. daily.

France Will Construct Four Hydrogenation Plants

After several years of extensive planning, the execution of which was repeatedly postponed, the construction of three new hydrogenation plants with a total capacity of 130,000 metric tons annually is now to be started under the Daladier government within the framework of the intensified measures of economic defense.

The Compagnie Francaise de Raffinage will erect at Donges (Seine), with state participation, a plant principally for the production of gasoline with a yearly capacity of 70,000 metric tons; a plant for hydrogenating lignite at Martigues with a capacity of about 30,000 tons; and a coal hydrogenating plant at Decazeville with the same capacity. For the purpose of erecting a fourth plant at Pauillac (Gerondé) negotiations have taken place between the French Government and an industrial group connected with the International Hydrogenation Patents Co.

Natural Gas News

Lone Star Gas to Appeal From Texas Decision

Ruling of the Third Court of Civil Appeals in Austin in the Lone Star Gas Co. gate rate case on April 12 is in direct conflict with the judgment of the U. S. Supreme Court, according to a statement issued by L. B. Denning, Lone Star president. Mr. Denning indicated that the case which has been pending for more than six years would be carried through the appellate courts. His statement follows:

"It seems clear to us that the latest ruling of the Court of Civil Appeals is in direct conflict with the opinion and judgment of the Supreme Court of the United States. The company was of the opinion that the decision of the U. S. Supreme Court finally settled the case, but it now appears that the Court of Civil Appeals has repeated the ruling which was reversed by the Supreme Court, hence it becomes necessary for the company to again prosecute the case through the appellate courts.

"The decision of the Court of Civil Appeals is primarily based upon its opinion that the company's evidence was legally insufficient to prove that the rate fixed by the Texas Railroad Commission was unjust, unreasonable, and confiscatory. It accordingly reversed the judgment of the trial court and findings of the jury, which held that the rate fixed by the Railroad Commission was unjust, unreasonable and confiscatory. This is the same ruling which the Court of Civil Appeals made in 1935 in this case, and it is the same ruling which the company appealed to the U. S. Supreme Court. Upon a full review of the case and the company's evidence the Supreme Court reversed the ruling of the Court of Civil Appeals and held that the district court had properly submitted the company's evidence to the jury, which found in its favor. It further held that the determination of the district court and jury 'as the tryer of the facts that the commission's rate was confiscatory could not properly be set aside by the application of an untenable standard of proof and in disregard of the evidence which had been appropriately addressed to the commission's findings and had been properly submitted to the jury.' "

The Supreme Court decided in effect that the jury verdict and judgment of the Fifty-Third District Court at Austin, which held in 1934 that the commission's order reducing the gate rate from 40 cents to 32 cents was unreasonable and confiscatory, should not have been set aside by the Third Court of Civil Appeals at Austin.

The Supreme Court sustained the company in the principal point raised, which was that the rate reduction order of the Texas Railroad Commission was unreasonable, unjust and confiscatory.

Federal Power Commission Denies Stay in New York Case

WASHINGTON, D. C.—A plea of the New York State Natural Gas Corp. for a stay of an investigation ordered by the Federal Power Commission has been denied.

Complaint was made by the New York commission that the price charged by the corporation to the Central New York Power Corp. for natural gas for resale was unjust and unreasonable. Hearings were held in New York City in February and March. The federal commission announced the corporation held differing contracts for similar services to the Central New York Power Corp., Alleghany Gas Co., New York Electric & Gas Corp., Keuka Construction Co., Home Gas Co., and Peoples Natural Gas Co.

Oklahoma Natural Announces Prize Competition

Joseph Bowes, president of the Oklahoma Natural Gas Co., asked the newspaper editors of the state "Where ahead lies Oklahoma's greatest opportunity, and how can we attain it?" at the closing session of their annual convention in Tulsa, April 6. He put the question through W. P. Steven, president of the Tulsa Press Club, host to the Oklahoma Press Association members during their two-day meeting. Oklahoma Natural offers two prizes totaling $350 for the best answers from anyone connected in any regular capacity with an Oklahoma newspaper. The contest opens at once and closes December 31. The prize winners will be announced at the mid-winter meeting of the Oklahoma Press Association in Oklahoma City next February.

"This question has been in the minds of the executives of the Oklahoma Natural for some months," Mr. Bowes said, "as we have watched Oklahoma's steady progress, and as we have studied her great concentrated supplies of natural resources. It seems a fine idea to challenge the editors and other newspaper men of the state to answer it. We hope many fine ideas will come from the contest."

President Bowes said five judges of statewide prominence will be selected to determine the winning replies.

Construction of Michigan Gas Line Starts May 15

SAGINAW, Mich.—Construction of a 42-mile pipe line extending from the big Arenac County gas field to Midland is scheduled to start Monday, May 15. The line is designed to provide an additional market for the gas of the Arenac field and an extra source of supply for the Saginaw-Bay City-Midland district served by Consumers Power Co.

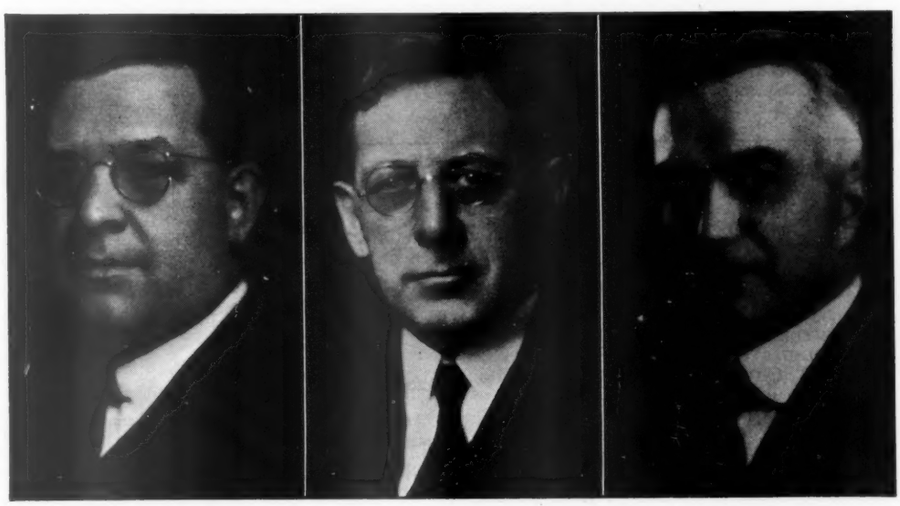
At Midland the line will tie in with the Consumers Power distribution system now supplied with gas from the Broomfield and Six Lakes pools. The line will be built for Northern Pipe Line Co. by H. L. Gentry Engineering Co. of Jackson. The contract price was announced as $250,000. The new pipe line, providing another outlet for the Arenac reserve, variously estimated at from two to more than five billion cubic feet, is scheduled for completion October 1.

Power Commission Asked To Cut Chicago Rates

CHICAGO, May 8.—The Illinois Commerce Commission, seeking lower gas rates for Chicago and northern Illinois consumers, asked the Federal Power Commission today to "fix fair, just and reasonable rates" on gas sold by two firms to the Chicago District Pipe Line Co. charging that the rates of the Natural Gas Pipe Line Co. of America and Texoma Natural Gas Co. were "unjust and unreasonable."

S. A. L. Morgan of Amarillo, Tex., attorney for defendants, challenged authority of the Federal Power Commission to interfere with prices fixed "by private contract."

OFFICIAL CHANGES IN JERSEY GAS SUBSIDIARIES



F. H. LERCH, JR. *H. C. COOPER* *L. L. TONKIN*

NEW YORK, May 8.—H. C. Cooper, president of Hope Natural Gas Co. and several other natural gas subsidiary companies and affiliated units of Standard Oil Co. of New Jersey, has retired and his duties have been distributed among several others. L. L. Tonkin, of Pittsburgh, becomes president of Hope Natural Gas Co. and of Hope Construction & Refining Co. F. L. Lerch, Jr., New York, president of Gas Companies, Inc. (Standard Oil Co. of New Jersey), has been elected president of Colorado Interstate Gas Co., the Mississippi River Fuel Co., and Hope Production Co. Oscar C. Gericke, of Pittsburgh, becomes president of the Domestic Coke Corp., and H. B. Shum, of the same city, is now president of the River Gas Co.

J. J. McMahon has retired as vice president of East Ohio Gas Co. He has been succeeded by William G. Hagan who will be vice president and general manager. He formerly was assistant general manager of the company. William G. Rogers, who has been secretary and treasurer, has been elected a vice president. Mr. Rogers has been succeeded by P. J. Leusch.

Natural Gasoline

New Recycling Project Announced

CORPUS CHRISTI, Tex.—Plans have been announced for the construction of a new gas recycling project in the north end of the Agua Dulce field, Nueces County, lower Gulf Coast, by a group headed by John J. Sheerin, San Antonio; Robert T. Wilson, Amarillo, and Clyde Alexander, Dallas. It will be built by Stearns-Rogers Manufacturing Co., Denver, Colo.; this company, with Parkhill-Wade, put in Corpus Christi's new plant in the Stratton field of same county.

The plant will have a capacity of 90,000,000 cu. ft. of gas daily, the largest capacity of any of the recycling plants which have been built on the Gulf Coast so far. Gas will be supplied from wells of the United Gas interests.

Gasoline Plant Planned For West Texas

In the Wasson field, West Texas, Shell Oil Co. is continuing to sign up gas contracts with the object of building a 15,000,000-foot natural gasoline plant in the near future.

Programs and Meetings

tional Oil Scouts Meet t Houston May 18-20

HOUSTON, Tex., May 8.—Final program for the sixteenth annual convention of the National Oil Scouts of America, Inc., to be held at the Rice Hotel May 18-20, will include addresses by Axtell J. Byles, president of the American Petroleum Institute; Col. E. O. Thompson, Austin, chairman of the Interstate Oil Compact Commission and member of the Texas Railroad Commission, and John R. Suman, vice president of Humble Oil & Refining Co. These addresses are scheduled for the general session Friday morning, May 19. Sessions of the opening day, Thursday, will be confined to conferences of officers and directors and committees. Only two general sessions are planned, Friday morning, and Saturday morning, the latter being devoted to election of officers and transaction of association business.

Canadian Gas Association Annual Convention

The program for the thirty-second annual convention of the Canadian Gas Association, in Hamilton, Ontario, June 6 and 7, follows:

"Rental Plan for Water Heaters," by George L. Schofield, new business manager, Republic Light, Heat & Power Co., Inc., Buffalo, N. Y.

"Air Conditioning and House Heating," by James R. Scott, Surface Combustion Co., Toledo, Ohio.

"The Natural Gas Industry in Alberta," by Julian Garrett, manager, Northwestern Utilities, Ltd., Edmonton, Alberta.

"The Electric Bogey," by Frank D. Howell, division superintendent, Dominion Natural Gas Co., Ltd., Brantford, Ontario.

"Distribution Details," by P. W. Geldard, assistant engineer of distribution, Consumers Gas Co., Toronto.

"Gas in Industry," by James A. Ward, industrial engineer, Republic Light, Heat & Power Co., Inc., Buffalo, N. Y.

"Medium-Pressure vs. Low-Pressure Distribution for a City With Relatively High Customer Demands," by Barclay W. Pitfield, assistant engineer, Northwestern Utilities, Ltd., Edmonton, Alberta.

"Personnel and Public Relations," by George R. Huxtable, comptroller, Ottawa Gas Co., Ottawa, Ontario.

"Corrosion on Underground Piping," by Erick Larson, engineer, Messrs Stevenson, Greist and Larson, New York.

There will also be a number of open discussions on problems of interest to the gas industry.

Public Relations Committee A.P.I. Meeting Program

A group session on public relations will be held Thursday, May 18, at 10 a.m., in Room E, Mezzanine Floor, Roosevelt Hotel, New Orleans, La., in connection with the Institute's ninth midyear meeting. The following program has been arranged:

"Possibilities for Public Relations in All Branches of the Industry," James Tanham, Texas Co., New York.

"Industrial Relations as Public Relations," C. R. Dooley, Socony-Vacuum Oil Co., Inc., New York.

"Dealer Relations From the Dealer's Point of View," H. A. Inness Brown, Gasoline Retailer, New York.

"Dealer Relations From the Supplying Company's Point of View," P. E. Lakin, Shell Oil Co., Inc., St. Louis, Mo.

"Public Relations for Industry," Milton Wright, author, New York.

Next Tax Dinner Meeting In Oklahoma City

The next dinner meeting of the Petroleum Industry Tax Representatives, Kansas-Oklahoma area, will be held at 6:15 p.m., Friday, May 12, at the Roof Room, Skirvin Hotel, Oklahoma City, Okla. The program will be given over to a discussion of the new tax laws enacted by the recent session of the Oklahoma Legislature, and to a discussion of Oklahoma fiscal problems. T. H. Marshall, Anderson-Prichard Oil Corp., Oklahoma City, will preside as chairman.

Dick Jones, attorney, Oklahoma Tax Commission, will discuss the new Oklahoma community property tax law and other Oklahoma tax laws enacted by the recent legislature.

Dr. J. M. Ashton, research director, Oklahoma State Chamber of Commerce, will discuss Oklahoma fiscal problems.

Indiana Gas Association Convention at Fort Wayne

FORT WAYNE, Ind.—The twenty-ninth annual convention of the Indiana Gas Association was held in Fort Wayne this week. Dean H. Mitchell, president of Northern Indiana Public Service Co., is president.

The other officers and directors are: Paul A. McLeod, Public Service Co. of Indiana, New Castle, vice president; H. W. Thornburg, Central Indiana Gas Co., Anderson, secretary-treasurer; and E. C. Weston, Indiana Gas Utilities Co., Terre Haute; H. G. Horstman, Public Service Co. of Indiana, Indianapolis; E. G. Peabody, Citizens Gas & Coke Utility, Indianapolis; C. D. Porter, Public Service Co. of Indiana, Indianapolis; F. B. Culley, Southern Indiana Gas & Electric Co., Evansville; L. B. Smith, Northern Indiana Fuel & Light Co., Auburn; L. B. Schiesz, Northern Indiana Power Co., Indianapolis; H. V. Armstrong, Indiana Gas Utilities Co., Terre Haute, and C. W. Goris, Gary Heat, Light & Water Co., Gary, directors.

The supremacy of gas as the modern fuel was the theme of the convention, for which the motto was "Let Gas Do the Four Big Jobs," cooking, water heating, refrigeration, and home heating.

Farrell Arrangements Head For I.P.A.A. Convention

J. E. Farrell, Fort Worth, Tex., operator, has been named chairman of the committee on arrangements for the tenth meeting of the Independent Petroleum Association to be held at Fort Worth October 18 to 20.

The appointment was made by Charles F. Roeser, association president. The chairman is vice president of the association for Northwest Texas. Members of his committee will be announced soon.

MAGNETIC STORM

TUCSON, Ariz., May 4.—A severe storm began May 1 at 1 a.m. and ended May 3 at 8 a.m., C.S.T.

CALENDAR

May

AMERICAN PETROLEUM INSTITUTE, ninth midyear meeting, Roosevelt Hotel, New Orleans, La., May 15-18.

NATIONAL OIL SCOUTS ASSOCIATION, Houston, Tex., May 18-20.

NATIONAL ASSOCIATION OF PURCHASING AGENTS, annual convention (Oil Company Buyers' Group), Fairmont Hotel, San Francisco, Calif., May 21-25.

WORLD AUTOMOTIVE ENGINEERING CONGRESS, sponsored by S.A.E. for New York (May 22-26), Indianapolis (May 20), Detroit (May 31-June 2), San Francisco (June 6-8), May 22-June 8.

June

ILLINOIS-INDIANA PETROLEUM ASSOCIATION, seventh annual conference, Robinson, Ill., June 3.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Hotel Hershey, Hershey, Pa., June 15-16.

AMERICAN SOCIETY FOR TESTING MATERIALS, forty-second annual meeting, Chalfonte Haddon Hall, Atlantic City, N. J., June 26-30.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.

July

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, regional meeting, San Francisco, Calif., July 10-17.

August

MICHIGAN OIL AND GAS EXPOSITION, Mount Pleasant, Mich., August 1-6.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, September 4-8.

OIL WORKERS INTERNATIONAL UNION, Hammond, Ind., September 5.

AMERICAN CHEMICAL SOCIETY, Detroit, Mich., September 9-13.

NATIONAL PETROLEUM ASSOCIATION, 37th annual meeting, Hotel Traymore, Atlantic City, N. J., September 13-15.

October

AMERICAN GAS ASSOCIATION, annual convention, New York, October 9-10.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, tenth annual meeting, Fort Worth, Tex., September 18-20.

NATIONAL SAFETY CONGRESS AND EXPOSITION, Chalfonte Haddon Hall, Atlantic City, N. J., October 16-20.

November

AMERICAN PETROLEUM INSTITUTE, twentieth annual meeting, Stevens Hotel, Chicago, November 13-17.

ENGINEERING and OPERATING

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Abrams "Explorer," special pusher type airplane with propeller in the rear, designed for oil exploration and pipe line survey work

Geologic From

By LOUIS DESJARDINS and S. GRACE HOWER

Geologists, Aero Exploration Co.

Petroleum geologists have, by a wide margin, been the largest users of aerial photography since its introduction commercially some 15 or 20 years ago. The geologist has always felt that the aerial photograph contained a wealth of information useful to his ends, but in many cases he has found that a segregation of information pertinent to geological needs was a problem commensurate with that of the proverbial needle in the haystack. This fact frequently brought him to such a state of discouraging confusion that for the more serious study of geology he often shelved his aerial photographs or condemned them outright.

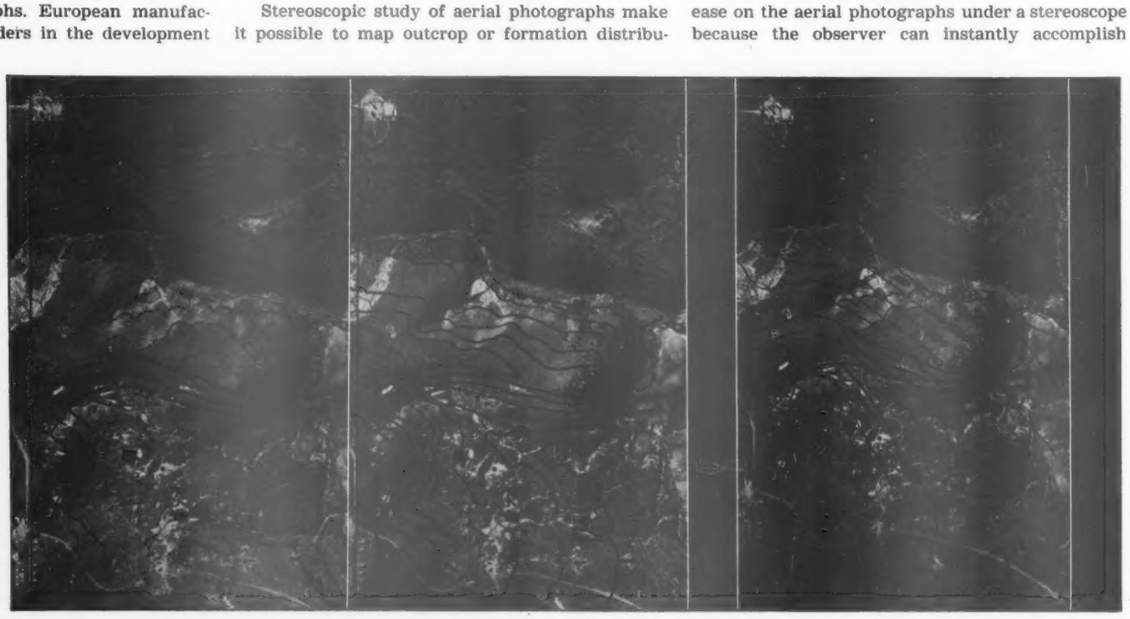
The idea persisted, however, that the aerial photograph could be made to yield areal geologic data. This idea is correct and the tracing of outcropping beds is now being done stereoscopically with greater facility by far than the equivalent task can be accomplished in the field by the usual plane table procedure. To the serious student of photogrammetric interpretation beds identify themselves on aerial photographs by a variety of criteria. It has, moreover, for some years been an established fact among practicing civil engineers that topographic mapping can be accomplished with almost any desired degree of accuracy on aerial photographs. European manufacturers have been the leaders in the development of stereoscopic instruments which, by measuring the parallactic displacement in a stereoscopic pair, permit the computation of elevations on the photographs. A combination of the areal and topographic mapping provides quite naturally for the production of geologic structural contours.

The extensive mapping program of the U. S. Department of Agriculture has given in recent years a great stimulation to the development of utilization of aerial photographs. Practically all of the photographs made under government contracts have been taken at an altitude to yield a scale of 1:20000 or slightly more than 3 inches to the mile. These standard photographs have been used for the most part in developing the technique hereafter described. Experiments have been conducted with photographs taken at larger scales and it seems probable that the larger scale is somewhat better for geologic purposes. A suitable scale should be decided upon and photographs made to yield an image size most conducive to successful geologic study of the area under consideration. It is desirable that the prints be supplied on the recently developed low-shrink papers. There is available a multitude of stereoscopic instruments of varying degrees of elaboration. However, for the type of work described here, the Zeiss pocket stereoscope has proven most satisfactory. The instrument is very convenient to handle, inexpensive, yields a 2½ times magnification and is easily obtainable. With this instrument areal geology and topographic contouring are done directly on the prints in different colors of ink which can be easily removed with a suitable solvent. In certain steps of topographic work a semitransparent tracing medium is used over the photographs. Sufficient transparency must be preserved to permit the stereoscopic effect to appear through it.

Areal Geologic Mapping

Stereoscopic study of aerial photographs make it possible to map outcrop or formation distribution in literally photographic detail without any field assistance. Geologic mapping from aerial photographs through the stereoscope is really field mapping most gratifyingly assisted by the ability to look instantaneously and effortlessly on the other side of the hill.

Individual beds present in the stereoscopic model definite characteristics by which they may be recognized and traced. The most valuable and the most commonly used criterion for tracing a bed under the stereoscope is the break in slope which it produces. This break in slope may appear as a sharp, well-defined scarp or it may appear as a slightly rounded physical feature on a broad, gently sloping general plains area. It may or may not be an actual outcrop but, if the bed continues, the scarp will continue, modified according to changes in lithology, structure, relation to the drainage system, cultivation and so on. A hard resistant formation will make a small waterfall or rapids which will line up with breaks in slope on the hillsides. Scarps which in the field are vague or which, because of perspective, lose their identity to an observer are traced with ease on the aerial photographs under a stereoscope because the observer can instantly accomplish



Areal geology *Topographic contours*

A stereoscopic pair of aerial photographs; on the right 20-foot topographic contours are shown; at the left areal geology is indicated. Viewed through a stereoscope, the pair produces a three-dimensional model with superimposed geology and topography

Structural contours drawn for area covered in stereoscopic pair at the left

Mapping the Air

Field crews checking flight maps before takeoff

what in the field means walking out the beds simply by moving his eye over the photograph. To him the perspective is always the same. The ability to look rapidly at many different places along the scarp carries one quickly and accurately over the less obvious spots. The vertical exaggeration of relief in the stereoscopic model is of great assistance to the geologist in this tracing of scarps, since slopes appear steeper and breaks in them sharper in the exaggerated stereoscopic model.

A second very important criterion and one which is used simultaneously with that of the break in slope is the vertical interval between beds. The vertical interval between beds remains, usually, approximately uniform over a considerable area. Consequently, when work is begun in a region, a very rapid examination is made of all the photographs and a very distinct section is chosen as a starting point. This corresponds to a similar field procedure but can be accomplished with the photographs in a fraction of the time required by field work. At this type section, then, the breaks in slope are marked, i.e., the working columnar section is drawn up. It has been found convenient to use a different color of ink for each scarp. In cases of thick soil covering or slight lithologic variation giving rise to decreased resistance to erosion a given scarp may become obscure. It is in such cases that the vertical intervals are of especial use, since, if they remain fixed immediately on either side of the obscure locality, it is a fair assumption that they are the same throughout. Likewise in cases where a resistant zone occurs made up of several thin layers a stratigraphic level may be run by maintaining equal vertical intervals between it and the scarps.

Careful attention to this stratigraphic interval is, in stereoscopic mapping as in the field, one of the best means of recognizing the wedging out or thickening of formations. Mapping such features in the field entails the walking out, often through wooded country, of each of such beds. Even more important than in the field is the vertical interval between beds in the correlation between opposite sides of a fault or of a broad river valley, in fact across any break in continuity. In this case the absence of direct lithologic or color guides is more than compensated by the ability to see both sides of the fault or both sides of a mile wide river valley at essentially the same time. Consequently to the observer experienced in stereoscopic criteria the photographic correlation is easier than that in the field.

Discussion of Criteria

The two criteria mentioned thus far, break in slope and the vertical interval between breaks in slope, have proven by far the most valuable in mapping areal geology. There are, however, other criteria which may assume definitive importance. Soil and vegetational coloration is one of these. Doubtless, when color photography has been successfully applied to mapping, color will become a distinguishing feature of importance. At present, however, what one sees on the photographs is a range of grays. The eye can become quite sensitive to slight variation in the tone of gray. A given bed may be darker or lighter gray than the one above or below. Soil mottlings which may or may not have a topographic expression also occur. Vegetational variation may frequently be useful. There is, of course, a marked relationship between stratigraphy and vegetation and this feature may be sufficiently definite to be used in mapping. Zones which carry water, such as joints or porous sandstones, may be the cause for striking localization of vegetation. The general aspect of trees, bushes and other vegetation is distinctly seen from one outcrop zone to another, often in ways which cannot be seen in the field. Different soils frequently bear entirely different types of vegetation or the same vegetation in varying stages of luxuriance.

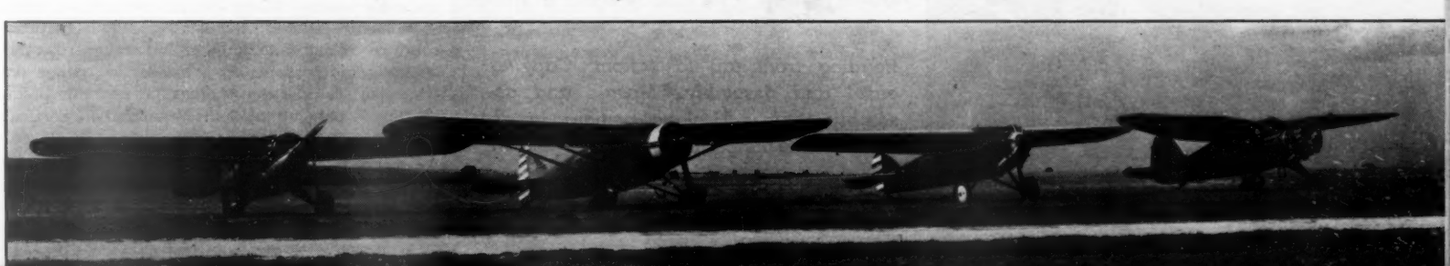
Besides being able to recognize the criteria of genuine character described the geologist must also be able to recognize pseudo or false criteria as well as artificial features on the photographs.

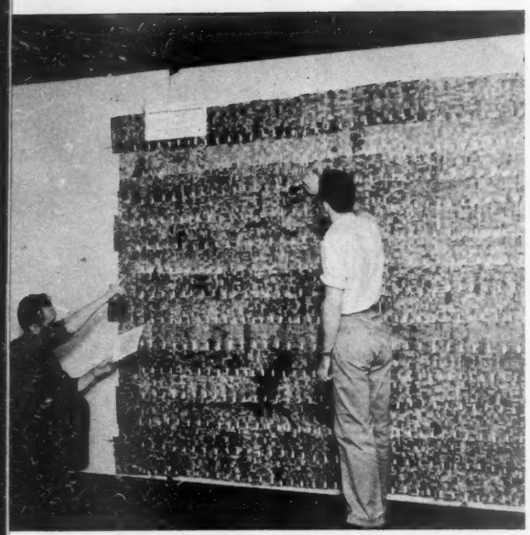
For more than 30 years mechanical devices for topographic contouring from stereoscopic images have been in existence. All of these are based on the recognized principle that differences in the elevations of points in vertical photographs may be computed by the direct comparison of the differences in parallax of corresponding points on overlapping photographs. It is not the purpose of this paper to discuss in detail the application of parallax analysis to photographic mapping or to attempt to describe the many instruments embodying these principles and the principles of projection or rectification of photographs incidental to their use. These matters have been adequately covered in various publications, the most widely useful of which are the texts by Talley[5] and Sharp[6] listed in the bibliography at the end of this paper. It should suffice to say that, at present, highly accurate topographic maps are being produced mechanically from aerial photographs by the Tennessee Valley Authority[4] and in the Brazos River conservation and reclamation district in the United States, by the Topographical Survey, Department of Mines and Resources of Canada[7] and in many of the countries of Europe.[3]

While being highly accurate, all of the machines thus far developed for contouring from areal photographs are expensive and cumbersome. To provide, stereoscopically, topographic contours sufficiently accurate for geological structure contouring the writers have originated a rapid, simple and inexpensive technique in which the Zeiss pocket stereoscope is the only instrument used. Successful contouring has been done by this method on intervals varying from 5 to 50 feet, depending on the relief. The results have been found to check to within half a contour interval and in most cases much more closely.

In topographic mapping, as in areal geologic,

Airplanes used for photographic surveys by Aero Exploration Co.





contact prints on nonshrinkable paper are used. In addition, all available ground elevation control is made use of. In theory the process is simple enough; levels are run by eye on the three dimensional model provided by the stereoscope to agree with the ground control. It is essentially field topographic mapping with the previously mentioned advantages of mobility, photographic detail, and so on. Like field topographic mapping, too, the stereoscopic technique requires considerable practice before the attainment of proficiency. It is essentially the same training of the eye and the hand. The topographer in the field sketches his contours on white paper, whereas the stereotopographer has the advantage of drawing his contours on the relief model itself. He is thus enabled to see that they exactly fit and, in addition, preserve equal vertical spacing. Again, the topographer in the field is required constantly to allow for the perspective effect of hills and valleys seen from a point on the ground, whereas under the stereoscope the whole scene is in equal perspective viewed from above. For these reasons such contour sketching in the field (the only method) requires measured control points very close together whereas similar accuracy with the same method under the stereoscope can be had from control points a half mile or more apart.

Though the stereotopographer has a model of the earth on which to work, that model is always to some extent distorted by slight tilt in the photographs. This tilt may make a stream appear to run up hill during part of its course, may make level ground appear rolling, may steepen or flatten hills. The mechanical contouring instruments mentioned previously are designed to remove such tilt. It has been found possible. however, to draw accurate contours in spite of tilt simply by applying ordinary principles of physiography and the results of experience gained in areas with plentiful control. The writers have experimented with and originated an instrument to measure tilt and to form correction patterns to compensate for it but have found such correction unnecessary. After a little experience the stereoscopic worker makes the compensation instinctively.

Possibly the best way to describe the suggested method of contouring is to indicate the steps through which a student might go in learning it. Such a student, if properly advised, would begin his work on photographs of some area with varied topography, and, to supply control, excellent topographic maps such as the Kiefer, Okla., sheet of the U.S.G.S. Under the stereoscope, then, he would attempt to redraw on the model the 25-foot contours from the topographic map. Even the best topographic maps made in the field will not fit the photographic model in all details but the better ones will do very well and give accurate elevations for hill tops, a good idea of where contours cross streams, some bench marks. In molding this information on the stereoscopic model the student learns to judge elevations, i.e. he learns what a vertical difference of 25 feet looks like on photographs taken at the given altitude and how this difference varies from one pair of pictures to another according to the variation in distance apart of their centers. He learns what allowance to make for gradient changes in a stream, how to compensate for tilt, to take into consideration the fact that exaggeration of relief is greater at higher than at lower altitudes on the photograph. He will learn that it is easier to run several contours at the same time than to attempt to draw a single one, false impressions due to tilt being thus exaggerated and hence more easily noted. He will learn to look constantly from one side of a valley to another, back and forth across hill tops, that his contours may lie in parallel planes which he knows to be level even though they may not always look level to the eye. He will learn, too, to contour his cliffs by predetermined ratio between top and bottom rather than by building up and to determine much in the same manner the stream crossings of contours. His eye will become skilled in running a level.

Reading from top to bottom: Copying easel and assembly.—Mosaic and assembly room.—Airplane camera installation.—Checking maps before takeoff

The next stage in the student's training should give him experience with contouring in an area where topographic maps are broadly accurate but very sketchy in detail. The Pryor, Okla., sheet of the U.S.G.S. might serve for this purpose. Contours on it are on a 50-foot interval and are reliable in the location of their crossing of the major streams. With the help of these contours the student should, under the stereoscope, be able to draw 20-foot contours accurate to within 10 feet.

In a more advanced stage of experience an area should be chosen where only the general magnitude of the difference in relief is known. Such a region might be that covered by the Topeka, Kans., sheet of the U.S.G.S. Here no reliance can be placed on the shape of the contours or their location; they are often grossly inaccurate in these respects. In this case it is possible to derive a set of contours which are level and equally spaced vertically but which may vary from true sea level elevation by 20 feet or less.

With such a training successfully accomplished an individual can contour stereoscopically with accuracy sufficient for geologic purposes any area which has any ground control. He can, moreover, contour areas without ground control so long as the altitude at which the photographs were taken is one with which he has had experience. Contours in this case would be referred, of course, to an arbitrary datum plane instead of to sea level. Where photographs have been taken at some altitude unfamiliar to the topographer contours equidistant vertically and level could still be drawn without ground control but the vertical interval could be estimated only roughly. In all these cases the resultant contours would be sufficiently accurate to act as the basis of good structural contours.

Structural Contouring

In practice it has been found most successful in the study of any given area to have two sets of prints of the photographs covering it. On alternate pictures of one set the areal geology is drawn. On opposite pictures of the other set are drawn the topographic contours. The two processes are carried on separately, as they may be mutually confusing if done simultaneously. A picture bearing the geology is then combined under the stereoscope with one bearing the topography and a single image showing geology and contours is of course the result. Where only one set of prints is available the topographic contours can be drawn on tracing paper placed over the alternate prints not used for geology. Tracing paper is at this point placed over the print bearing the geology and section lines or other location marks are traced through. Elevations are then noted at many points on all the beds mapped using different colors for the figures for each bed. Tentative structural contours are drawn for each bed from these elevations. When this has been done, cross sections are run on the basis of the structural contours at half-mile or other intervals across the strike. This is done on cross section paper on the same scale as the photograph. At this point any previously unnoted discrepancies in vertical

(Continued on Page 59)

Multiple Sand Completion Uses Removable Casing

By HARRY F. SIMONS

Twin producing horizons such as exist in the Louden and Lake Centralia fields in the southern Illinois basin always present an interesting technical problem because of the choice of procedures presented. The most economical method is to produce both sands through one hole, but obtaining the satisfactory production conditions in the upper sand is often difficult. Carter Oil Co. controls approximately 18,000 acres in the Louden area and they have recently developed a method of handling the wells having two pay zones to allow them to produce each sand as effectively and efficiently as they could by drilling two holes. The main feature which enables them to do this is a "removable" pipe section which is run in the casing string so that it will be opposite the Cypress (Weiler or Stein) sand when the casing is cemented. Removal of the pipe then exposes the complete Cypress section. Two types of pipe have been used, one being removed mechanically and the other by use of acid.

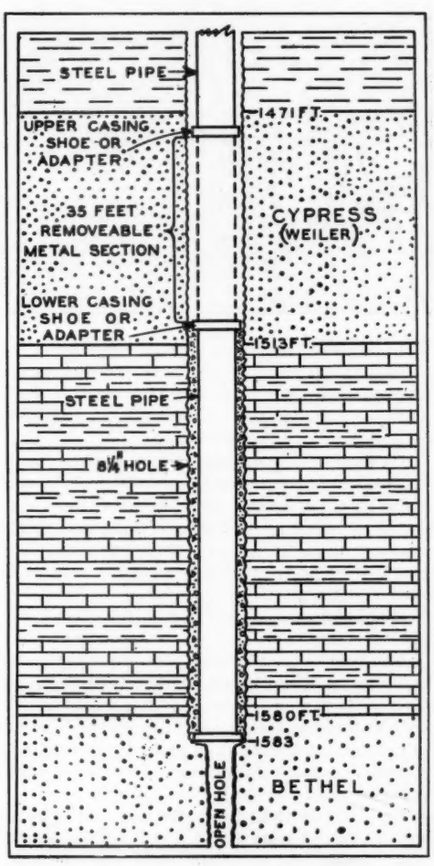
Two Producing Sands

Due to the geological conditions in the Louden area, both of these sands are not productive in all of the wells in the field, the Cypress being absent on the west side. In other wells the Cypress produces and the Bethel (Benoist) is either dry or contains water. Both formations are productive over a large enough area to make the drilling of the dual sand wells an important economic feature. The same is true of the Lake Centralia area where the Bethel (Benoist) and the McClosky are both found to be good producing sands. For the present in the latter area, most of the wells are stopping in the Bethel, but in a great many cases holes are drilled large enough to accommodate a casing size which will permit deepening of the holes.

Due to the production problems accompanying the removal of crude from two sands through one well bore, many operators drill a separate well to each sand. Added to the cost of drilling duplicate holes is the expense of casing, tubing, surface equipment and well servicing. Two pumping units on a well location are a common sight in the Louden field.

One of the principal objections to producing two low pressure sands through common strings of casing and tubing has been the inaccessibility of the upper sand. In the Louden field it has been found that a comparatively heavy shot of nitroglycerin (from 50 to 80 quarts) is a great aid in creating a satisfactory producing condition in the Cypress. Shooting of the Bethel is also necessary for loosening the formation as an aid to production. Due to the shales and limy shale formations between approximately 1,510 and 1,590 feet, it would be practically impossible to leave this part of the hole open as the caving formations would interfere with the production from both sands. For effective production from both of the horizons it is desirable to have the hole uncased opposite the Cypress, cased between the bottom of the Cypress and the top of the Bethel, and open hole from the top of the Bethel to the total depth.

Principal preparatory work before running casing in a dual well consists of locating the Cypress productive zone so the removable pipe can be accurately placed; this is done by samples and coring checked by electrical logging devices. On the wells completed by this method which use the Securaloy pipe, 60 feet of 6-inch O.D. steel pipe weighing 14.64 pounds per foot cases the hole from 1,511 to 1,583 feet which is between the



bottom of the Cypress and the top of the Bethel. A casing shoe on bottom was used for the lower part of the string; a 6-inch inverted steel shoe is screwed on top of the steel pipe and then a 6-inch by 5-inch reducer is installed. The next 35 feet of pipe is the section that will come opposite the Cypress from 1,471 to 1,513 feet, and it is the casing section that will later be removed to expose the sand. This section consists of the proper number of joints of removable pipe.

The removable pipe is seamless; its is manufactured by the extrusion and drawing processes after which it is straightened and heat treated. On top of the removable section is a 6-inch by 5-inch reducer and a steel casing shoe. All the casing above this point is of the regular steel variety.

Welded steel casing has been used in practically all of the Carter wells in Illinois but the thread couplings can be attached by welding and the joints where the change is made from the steel to the removable pipe are prepared ahead of time.

Casing Cemented

After running the pipe, it is cemented in the regular manner, the cement slurry being circulated back to the surface whenever possible. The cement is allowed to set 72 hours before elimination of the cement and the removable pipe is started. A 5¾-inch bit is first run into the hole to clean out the casing to the top of the removable pipe. A pilot-type bit is then run in the hole and used to drill up the mechanically removed pipe. On the first well using this method in the Louden field, one point (approximately 2,000 pounds) weight was used while drilling the pipe and the cutting rate was 3 feet per hour. The cuttings were easily removed from the hole by the circulating fluid. A Baker wall scraper is the next tool run into the hole and the Cypress section is enlarged from a 5-inch, cement-lined hole to a clear hole having a diameter of 9 inches. Production of the well is then tested to determine the size of the shot required.

The procedure for the acid removed pipe is slightly different as the mud is displaced from the casing by clear water and then acid is pumped down the tubing, from 1,000 to 1,500 gallons of 15 per cent acid being used. When there is no more hydrogen gas coming from the well it is evidence that the action of the hydrochloric acid on the metal pipe is complete and excess acid is pumped from the tubing and the tubing flushed. An excess of acid is generally used to insure complete dissolution of the pipe.

Shooting in such cases requires careful preparation to prevent damage to the casing above and below the Cypress section. Space below the shot is tamped with gravel to lessen the shock on the top of the casing in the lower hole which is further protected by the inverted steel casing shoe. A timed 20- to 30-quart shot is installed and the bottom of the upper string protected by more gravel tamping. This is the most critical stage in the procedure and the casing shoes help in the prevention of an adverse effect on the casing.

After the discharge of the nitroglycerin shot, the hole is cleaned out with the drill pipe and drilling bit and the production tested for the effect of the shot. If any further treatment of the Cypress is necessary it can be accomplished at this stage in the procedure.

Following satisfactory completion in the Cypress a 5¾-inch bit is run in the hole and the cement drilled from the casing in the section on top of the Bethel. The Bethel is then cored, the hole enlarged with the wall scraper, and the well

completed for testing. After testing the production from the Benoist, it is also shot to loosen the formation with the same care being taken to prevent damage to the lower section of the casing. The above method was that used when first introduced in Illinois; as the work progressed several changes have been made, the principal one being the completion of the lower horizon before completing in the upper formation. This procedure was developed to prevent contamination of the upper horizon after it has been completed and while completing the lower Bethel sand.

The casing size opposite the Weiler is the same as the rest of the string and cementing is done in the normal manner with the plug being pumped to within a short distance of the bottom. The Bethel is cored, drilled and tested, shot and tested again. Gravel and cement are then used to plug the top of the lower section of steel casing after which the casing protecting the upper sand is removed; in the case of Securaloy pipe a Baker wall scraper was used while the Dowmetal pipe was removed with the regular acidization process.

While the original method of completing the upper sand first and the lower sand second gave good results the later method when used on the No. 1 L. C. Owen, in the Louden field, gave a total production from the two sands that was practically equal to the sum of the production from the separate sands. Production from the Bethel on swabbing test was 270 bbls. and the production of the Weiler was 187 bbls. On removing the plug in the top of the Bethel and testing both formations at the same time a production of 455 bbls. was obtained.

Carter Oil Co. has a well formulated production conservation plan which demands satisfactory completions in the Cypress and Benoist sand in one well. Present gas-oil ratio is approximately 400 cu. ft. of gas per barrel of oil with a bottom-hole pressure of 675 pounds per square inch. To conserve the gas in the Cypress and Bethel, the Carter has erected a gasoline-recycling plant in Section 15-18-3 which will take the gas from separators and tanks and compress it to 700 pounds per square inch for returning to the formation through input wells.

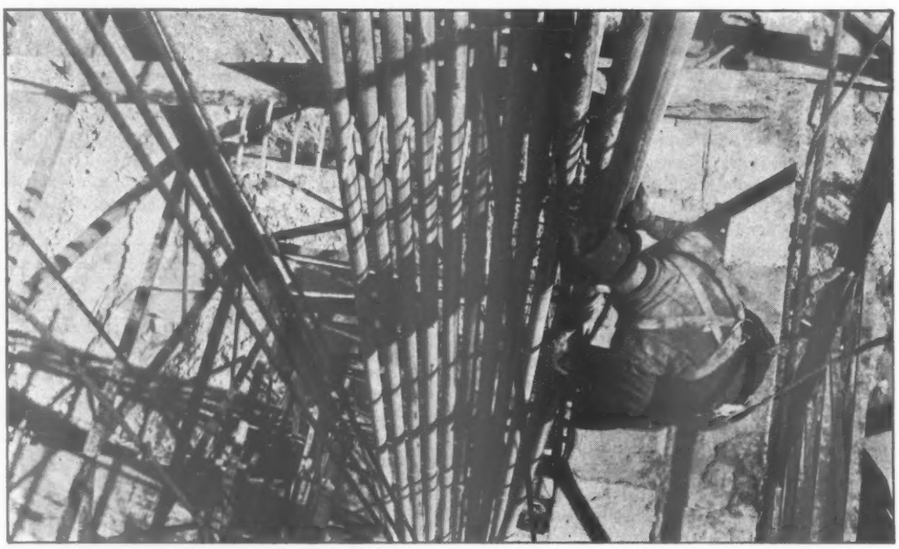
Success of the repressuring will depend to some extent on the condition of the wells at completion time. As results comparable to those possible through drilling of two holes can be obtained by the above method it will probably lead to its wider use in the completion of two-sand wells regardless of whether repressuring is intended. The increasing number of Illinois fields with multiple producing horizons requires the development of a satisfactory method for producing two or more formations through one well bore. Another adaptation of the above is being introduced on wildcat wells, a recent test in Kentucky running several removable sections in its casing string. The lower formation will be tested first and then successive plugging back, removal of casing sections, and testing of upper pays will determine the productive possibilities of the test.

A.S.T.M. Specifications for Steel Piping Now Available

Results of many years' work by Committee A-1 of the American Society for Testing Materials has resulted in the development of specifications covering steel materials for high-temperature service. These specifications are now compiled in one book, "A.S.T.M. Specifications for Steel Piping and Piping Materials for High-Temperature and High-Pressure Service," published by the testing society. Some of the specifications have been published in separate pamphlets and in the society's book of standards, but the new book marks the first time the complete compilation has been issued.

The book is divided into four sections and further divided into 18 specifications covering carbon steel and alloy steel pipe and tubing, castings, forgings and bolting. All of the specifications are extensively used in industrial work and several have been approved as American standards by the American Standards Association, and a number have been adopted by the boiler code committee of the American Society of Mechanical Engineers.

SAFETY — Fill in Boards Protect Derrick Man



In shallow fields operations are frequently hurried to the point where standard practices are often disregarded even though they may endanger a man or men. In this case the derrick man is in danger of a nasty backward fall.

On most rotary drilling rigs a suitable double (thrible or fourble) board is provided. It is generally 32 to 36 inches wide, in most cases consisting of two 6 by 16-inch oak timbers about 16 feet in length. Some use a shop fabricated steel deck that is covered with heavy mesh screen while other contractors make a frame of 4½-inch drill pipe and cover it with rough 3 by 12-inch oak boads.

The boards (or platforms) are built unusually heavy when it is considered that their principal function is to support the derrick man. However, some unforeseen things often happen, such as the traveling block falling on or against the board, and the board is generally built to stand as much strain as the derrick.

On short derricks the main part of the board must be placed from 2 to 3 feet from the derrick legs. The general procedure is to land the board and then elevate the blocks until they are just opposite it; the board is then located so the blocks will have 3 to 6 inches clearance, depending on the preference of the derrick man. The space between the main board and the derrick legs is then filled with lighter boards, thus making a platform from 4 to 5 feet in width.

The derrick man can work safely under ordinary conditions on the narrower platform but occasionally he loses his balance and falls backwards. This is due to speed and force with which he works, only a fraction of a second being allowed for his pulling the elevators around the pipe and latching them. If the swing of the blocks is fast the elevator handles may hit the board and bounce away; the derrick man is, in one motion, reaching for them and pulling them toward him. If he fails to contact the handles he is thus in a position of pulling with all all his might against nothing and he consequently falls backwards. If the elevator handles are wet and muddy his hands may slip and his equilibrium is disturbed.

With a wide board there is little chance of injury but if he falls backward off the board he will have the odds against him as he will almost surely contact one of the steel girts with considerable force. There is also the possibility of the safety rope breaking as he can fall much farther before being caught by the safety belt if he goes off the board backward than if the goes off of the front side; the rope is attached to the side of the derrick and is only long enough to allow the man to fall about a foot below the front of the board before being caught whereas if he goes off the back of the board he can fall about 3 feet before being stopped. The derrick man in this case reported that his fill-in boards were lost while moving.

Note that the line burner in his left hand is attached to a braided cord that is tied to the derrick side. In case he should drop it accidentally it would only fall a few feet before being caught by the rope. Some derrick men are extremely careless about the condition of this rope and allow it to become frayed; others are extremely careful and do not depend on rope but insist on their employer furnishing soft-laid wire line for holding the line burner and similar equipment.

Trend in Pipe Line Practice

By W. G. HELTZEL
General Superintendent, Stanolind Pipe Line Co.

Paper presented at Oil-World Exposition. Houston, Texas. First half.

This paper, prepared as a summary of recent improvements and progressive changes under way at this time, which might indicate a trend in the methods and practices, includes a discussion of the influence of these changes and the benefits and advantages that might be realized by the industry. Since this article represents the observations of an individual and opinions based largely on his own experience, and because the ultimate form of developments cannot be foreseen, the paper is offered for the consideration and discussion of the meeting. A review of the gathering system in the first part of the paper is followed by a resume of improvements in the trunk line.

The Elimination of Tanks for Checking Field Receipts

The customary method of checking field receipts by measurements in tanks is giving way, under economic influences, to a simpler and less expensive procedure designed to move the oil from its source to the trunk line in a most direct manner and with as few intermediate relays and interruptions as possible. Checking field receipts in tanks at the initial gathering station and at intermediate relay stations involves not only a large investment in, but also high operating and maintenance expenses for land, tanks, firewalls, station lines, manifold piping systems, suction pumps, discharge pumping units, and buildings—representing the facilities of the conventional type gathering station. Large losses of petroleum vapors, resulting from oil moving in and out of tanks must be charged also against this method. The change from the customary method to the simplified procedure has been made possible by the use of the compact, portable, multiple cylinder gas engine and piston type pumping unit for moving the oil from the lease tanks to the trunk line either directly or through an intermediate high pressure relay station. The accepted use of this type of pumping unit for new gathering systems will gradually eliminate the use of tanks for checking field receipts.

Recognizing that the customary method of checking the field oil involved burdensome operating and maintenance expenses for old type field gathering stations, our company abandoned this practice and inaugurated a simple procedure of checking only at trunk line reception point as long as three years ago. Today practically all its old type field gathering stations, including the tanks for checking purposes, have been abandoned and dismantled. Some of these stations have been replaced by a simple, modern, compact, portable type pumping unit; the comparison of this change is shown in Figure 1-A. The abandonment of the established method for checking field receipts in and out of tanks and the substitution of the portable type pumping unit for the conventional type gathering station of moderate capacity should bring about, in due course of time:

(*a*) The simplification of gathering facilities, particularly gathering stations;

(*b*) A reduction in operating and maintenance expenses, consequently, lower gathering costs;

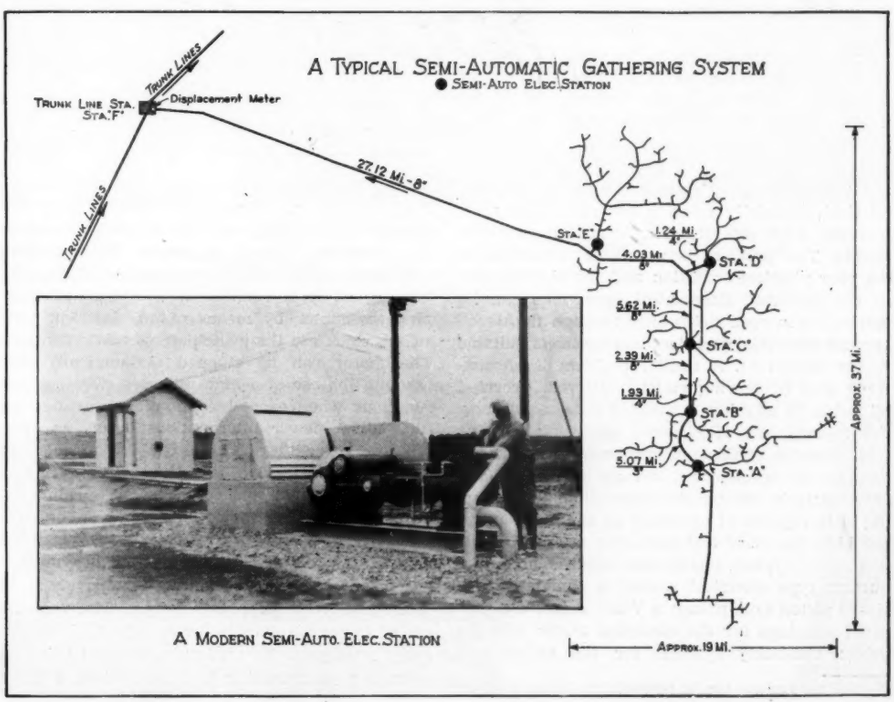
(*c*) A large reduction in evaporation losses;

(*d*) The adaptation of the gathering facilities to new practices already under way.

Advantageous Use of Portable Type Pumping Equipment

The use of portable type pumping equipment for temporary stations in new fields has minimized the risk of making large investments in permanent facilities before the production of the field warrants such expenditures. Since this type of installation can be made without such auxiliary facilities as buildings, tanks, suction pumps, station lines, and manifolds, only a small cost is required for the first pumping unit, as well as additional facilities that might be required to meet the increase in production of the field. In many cases this type of equipment can be used in new fields until many of the factors, needed for selecting a location and preparing an economical design for a permanent station, can be determined. For example, during the first year of the development of the Fitts field, our company made use of a temporary station consisting of four portable pumping units for delivering approximately 4 million barrels of oil from this field to the trunk line. When the prorated production of the field reached 18,000 bbls. daily, the portable units operating at a pressure of 650 pounds were replaced by a permanent high pressure station, designed to meet the conditions which were fairly well known by that time.

On account of their short economic life, high pressure field gathering stations are designed now for simplicity, low investment and high salvable values. In so far as possible large investments in facilities with low salvable values, such as large tanks, machinery foundations, floor space, firewalls, and station lines are avoided. Checking the oil only at the trunk line reception point eliminates the investment in tanks for this purpose at the gathering stations; however, large storage tanks are usually provided also at field gathering stations as insurance against any interruption of service in running oil from the lease tanks. Since few failures would occur in a newly laid, welded discharge line (between the gathering station and the trunk line) during the time required for the development of the field, shutdowns or interruptions in operation will depend almost entirely on machinery failures at the gathering station. The necessary insurance against interruptions of service, provided for in the use of a reasonable amount of storage room, can be obtained in an equal or greater degree by continuous operations. Therefore, with this practical requirement satisfied, it is more economical, on account of the comparative salvable values, to invest in light weight, compact, high speed pumping equipment, rather than in reserve storage tanks and firewalls. This statement does not preclude the use of a tank or tanks sufficient in volume to provide the necessary stock and room required for meeting the variations between the pumpings and the field receipts at the gathering



A MODERN SEMI-AUTO. ELEC. STATION

station. A gathering station designed on these principles, namely, simplicity, low investment and high salvable value, was built and put in service in August 1935 in the Fitts field (Oklahoma). The station consists principally of:

One sectional steel building, 32 by 124 feet.

Six 300-hp., 625 r.p.m., 8-cylinder vertical gas* engines connected through gear increasers with

Six high pressure 3,600 r.p.m. centrifugal pumps.

Two electrical generators, belt driven from the shaft of the engines.

Two 18,000-bbl. capacity floating roof tanks.

One suction pump (10 by 18) used in connection with a gravity system serving a group of low lease tanks.

Six high pressure heat exchangers installed in crude oil discharge lines.

A simple system of station lines and a sectional manifold piping system.

Two centrifugal pumps running in series have a capacity of 30,000 bbls. per 24 hours at 700 pounds pressure. Four of the 300-horsepower engines, connected with a corresponding number of centrifugal pumps, were used for obtaining a pumping capacity of 60,000 bbls. per day. The other two pumping units were held in reserve for emergency shutdowns. The station operated over a period of several months at capacities of nearly 60,000 bbls. daily. Seven hundred pounds was a normal operating pressure. Since installed, the pumping equipment has delivered approximately 55 million barrels of oil. The equipment is still in excellent condition. As planned in the original design, the pumping machinery and complementary equipment such as discharge, suction and manifold piping, heat exchangers and even sections of the steel building can be reclaimed as respective units for use elsewhere, as the decline in the production of the field permits. The successful operation of this station has proved the practicability of and justified the principles used in its design.

FIG. 1-A
An example of modernization by replacing an obsolete gathering station by the installation of a simple inexpensive semiautomatic pumping unit.

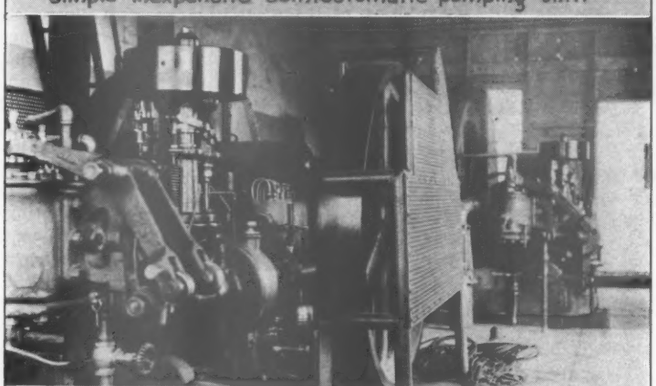


FIG. 1-B
The engine room side of the station building shown above.

FIG. 1-C
A semiautomatic electric station used in a remote and isolated district.

Gathering small quantities of oil in a "stripper" oil field, especially when it covers a large area, involves high operating and maintenance expenses. The problem is usually accentuated by the poor physical condition and the obsolescence in the facilities. Economical operations can be carried on in such fields only through the development of special practices and methods suitable to the conditions. A similar problem is encountered also in serving small, scattered, prorated oil fields. In addition to meeting these conditions, the replacement of obsolete gathering stations with modern equipment has been accomplished through the development and use of a simple and comparatively inexpensive semi-automatic pumping unit, capable of operating at capacities up to 250 bbls. per hour and pressures as high as 400 pounds. A typical installation consists of an induction type electrical motor; a completely enclosed piston type pump; a V-belt drive; weather proof housings for the electrical motor and the drive; self-oiling systems for the motor and pump; suction and discharge piping fabricated from seamless pipe and forged steel fittings; and a small building used to house all the instruments and electrical control equipment. The pumping unit is installed with or without a building, depending on local conditions. Starting and stopping the motor by means of an electrical time switch clock are the principal automatic features. The motor can be stopped automatically also through the use of a high pressure switch which functions when excessive pumping pressures occur. When power interruptions occur, an open phase relay with a time delay disconnects the power for a period of 20 minutes, thereby preventing the motor and compensator burning out on account of the motor "rocking" on and off the line. For safety purposes all the electrical switches, auxiliary equipment and instruments are placed in a small building located about 50 feet away from the pumping unit. The valuable use of the semiautomatic pumping unit in developing a program for modernization and bringing operating costs in line is illustrated in Figures 1-A and 1-B, which represent the replacement of an obsolete station with such a type unit. The useful application of the semiautomatic station in "stripper" fields is illustrated in the attached typical plan. The five semiautomatic stations gather from 10 to 12 thousand barrels daily and deliver it to the nearest trunk line station through 27 to 45 miles of tributary lines. Station "D," shown in this diagrammatic sketch, has operated satisfactorily as a semiautomatic station for over a period of 10 years. The capacity of the unit has been increased from a few hundred barrels at the time of its installation to 2,000 bbls. per day at the present time. A 5,500-bbl. bolted tank, installed at Station "C," serves as a reservoir for variations in field receipts; its use permits operating these stations on a definite schedule and provides for an average rate of hourly pumpings, which keeps the power costs to a minimum. A displacement meter at the trunk line reception point is used for checking the hourly receipts against a prearranged pumping schedule. Some stations are used only during certain hours of the day; however, Station "C" usually operates over the 24-hour period. During the daylight hours there is no attendance, except an occasional inspection by a gauger. During the night hours, an observer at Station "C" maintains a watch on these stations through the aid of instruments and makes an inspection of each unit about every three hours. Using the company's private telephone and telegraph circuit, automatic signals are used in connection with four of the semiautomatic stations for informing the dispatchers in the general office, located 50 miles away, when one or more of these stations shut down before a designated hour. This arrangement enables the dispatchers to know also which of the four stations has shut down for some unknown cause. The signal also is used for indicating to the dispatchers when the units are started. A prearranged shutdown by the time clock does not send out a warning signal. Similar instruments and warning signals, provided at Station "C" for the use of the observer during night operations, warns him as well as the dispatcher in the general office when a station shuts down, so that he can make an immediate investigation. Recording suction and discharge pressure gauges and an orifice meter, installed at each station, provide the necessary information to show how the respective units are or have been functioning. Shutdowns on account of electrical storms have been the principal trouble encountered in the use of this type of equipment. Thorough inspections are made every six months to insure safe and reliable operations. As a precaution against failures, this equipment is kept in excellent condition by regular overhaul of the machinery. In operating this type equipment, every safety precaution against fire hazards and mechanical failures must be observed. The welded discharge line between the field and the trunk line station is an important safety factor in this type of operation.

(To Be Continued)

*The gas engines can be converted to Diesel engines.

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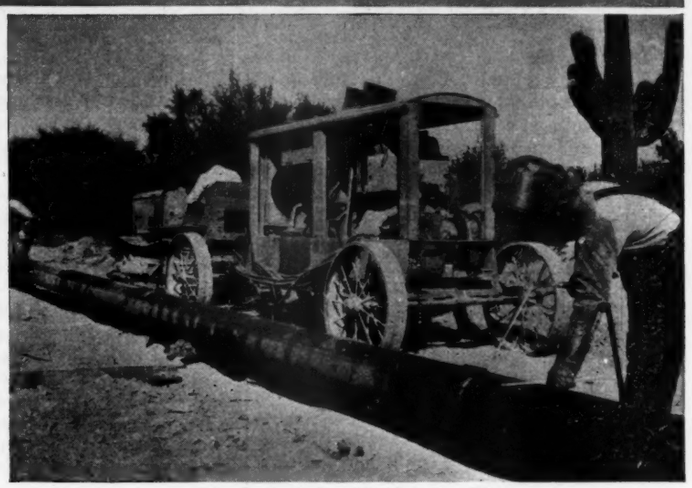

IN SWELTERING HEAT

The heat of the *"Shield-Arc"* welding process is concentrated at the joint. This minimizes operator fatigue for low costs and high quality construction during hot summer months. Illustrated: A 10-inch gas line in Arizona. Courtesy H. C. Price Co.

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Study of Physical Properties of Rotary Drilling Muds

By FREDERICK G. TICKELL and MARION H. STEKOLL
Stanford University, California

Study of the literature on the chemical treatment of drilling muds reveals the fact that, in most cases, the effects of such treatment are reported inadequately. That is to say, a certain chemical may be discussed merely from the standpoint of its effectiveness as a viscosity reducer or, perhaps, of its action in wall sealing. The point is that it is desirable to consider all of

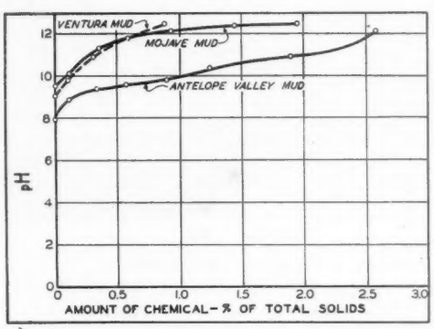

Fig. 1—Effect of 20 per cent tannic acid and 80 per cent NaOH on pH

the important effects of the chemical treatment of a mud rather than one or two of the more obvious ones. If this is done, it may be found possible to decide which tests have significance in terms of desirable properties of the mud.

While chemical treatment may result in one property of a mud being favorably affected, an equally important property may be adversely affected. This being the case, more effort should be directed towards obtaining complete knowledge of the results of chemical treatment. Such analy-

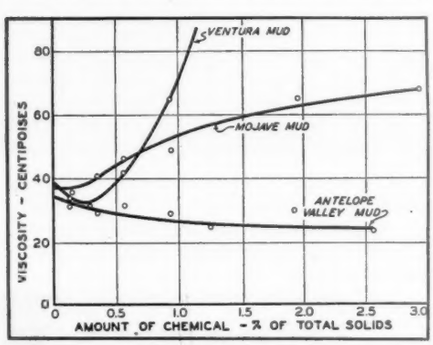

Fig. 2—Effect of 20 per cent tannic acid and 80 per cent NaOH on viscosity

ses of treated muds would bring about better mud control, and would result in a clearer understanding of the relationships between the properties involved.

This paper is for the purpose of itemizing and describing the physical and mechanical properties of drilling muds that should be correlated with the amounts and kinds of chemicals added. There is given, as an example, the effect of treating three varieties of natural muds with a commonly used reagent (sodium tannate), as derived from the addition of a solution of 20 per cent tannic acid and 80 per cent sodium hydroxide to the mud. Correlations of these properties are discussed.

The properties tested and the methods used for testing the various muds are as follows:

1. Apparent viscosity. This was tested by a Stormer Viscometer at a spindle velocity of 600 r.p.m.

2. Gel strength at 0, 10, 20, and 90 minutes, as determined by the weight necessary to start motion of the cup in the Stormer instrument.

3. The yield point, determined by an instrument similar to that described by Evans and Reid.[1] A thin metal plate is suspended from a calibrated Jolly-balance spring. The plate is dipped into a beaker of freshly stirred mud. Tension is placed on the spring by lowering the beaker to a point where the plate will begin slipping in the mud. The movement of the beaker is then stopped and the reading of the spring taken when the upward motion of the plate through the mud ceases. Using the formula given by Evans and Reid,[2] a value for yield point was obtained. The formula is as follows:

$$\text{Yield point} = \frac{4g(m-M+vd)}{3A}$$

where

M = weight of plate and wire (grams)
v = volume of plate and wire (cc.)
d = density of mud (g./cc.)
m = force required to lift plate (grams)
A = area of plate exposed to mud (cm^2)

4. Thickness of filter-cake and the volume of filtrate expressed therefrom, tested by a piston and cylinder type of pressure filter operated by a small hydraulic press. Mud was pressed against a filter paper at a pressure of 1,000 pounds per square inch for 45 minutes, and the thickness of the cake measured with a small micrometer-head set in a wooden support.

5. The percentage of water separating from the mud in 24 hours, determined by allowing the mud to stand undisturbed in a graduated cylinder.

6. Hydrogen-ion concentration (pH), found by a Leeds-Northrup glass electrode and potentiometer.

These tests were performed after the chemical had been in the mud under constant agitation for 20 hours. The tests give some indication as to the effect of the chemical employed after the mud has been in contact with the treating agent for some period of time. These tests were made at room temperature, and do not necessarily indicate what effect may be expected under elevated temperature conditions.

pH and Viscosity

A relationship between pH and apparent viscosity may be seen by referring to Figures 1 and 2. Ventura mud, Figure 2, showed the most rapid rise in apparent viscosity after 0.3 per cent of the chemical had been added and, as may be seen from Figure 1, it also showed the most rapid rise in pH. Antelope Valley mud, on the other hand, when treated with the chemical, gave the lowest apparent viscosity as well as the slowest rise in pH values. Mojave mud was intermediate with respect to the effect of the chemical on apparent viscosity and pH values. It may be seen, then, that these tests bring out a probable relationship between the effect of the chemical on the rate of rise in pH values and the apparent viscosity. A more rapid rise in pH, as the chemical is added, parallels a higher viscosity of the muds, and vice

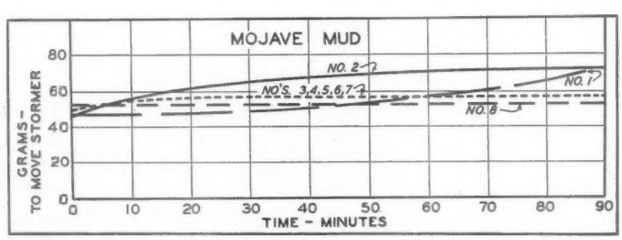

Fig. 3—Effect of mixture containing 20 per cent tannic acid and 80 per cent NaOH on gel strength. Proportion of chemical by weight of total solids follows: Line No. 1, 0 per cent; No. 2, .11 per cent; No. 3, .35 per cent; No. 4, .58 per cent; No. 5, .94 per cent; No. 6, 1.45 per cent; No. 7, 1.95 per cent; No. 8, 2.9 per cent

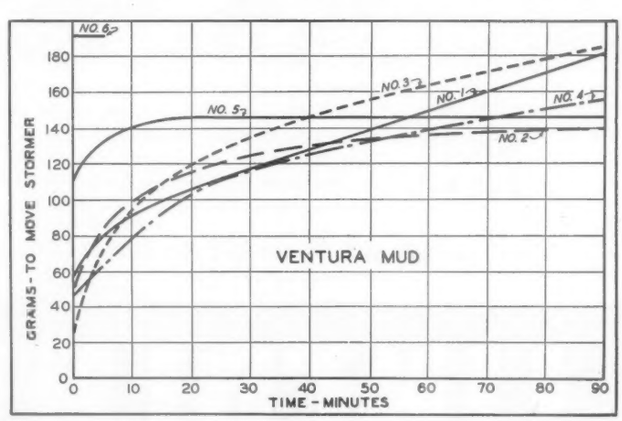

Fig. 4—Effect of mixture containing 20 per cent tannic acid and 80 per cent NaOH on gel strength. Proportion of chemical by weight of total solids as follows: Line No. 1, 0 per cent; No. 2, .1 per cent; No. 3, .3 per cent; No. 4, .6 per cent; No. 5, .9 per cent; No. 6, 1.2 per cent

versa. If numerous tests are made with different muds and different chemicals, it is possible that some definite predictable relationship of this type may be made.

According to Meyer,[3] when using Forest clays, a higher pH in a mud resulted in needing more sodium silicate to get a minimum viscosity. As may be seen from Figures 1 and 2, this was not the case with the muds tested and the chemical used. In fact, more nearly the opposite results were obtained, the mud with the lowest pH requiring more chemical to reach its minimum viscosity than for the muds of higher pH.

A relationship between pH and the rate of gelation may be seen by comparing Figure 1 to Figures 3, 4, and 5. From this comparison the rate of rise in pH, when a chemical is added to a mud, may be seen to correspond to the rate of gelation of the untreated muds. Ventura mud, which rises most rapidly in pH when the chemical is added, also has the greatest rate of gelation in its untreated state. Antelope Valley mud, on the other hand, is the lowest in both respects. Quite obviously, the rate of gelation of an untreated mud may be correlated with the rate of viscosity increase as a chemical is added, for, when the chemical is added to a mud with a high rate of gelation, the result will be to raise the apparent viscosity more, or sooner, than if the mud had a low rate of gelation.

According to Garrison,[4] the rate of gelation tends to fall off up to a pH of 10 and to rise thereafter, when using bentonite. While this was found to be true with the nonthixotropic Antelope Valley mud, the opposite effect was found with the other two more thixotropic muds tested.

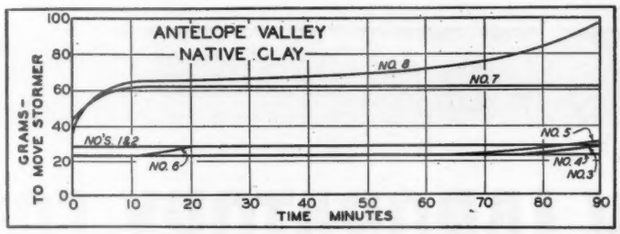

Fig. 5—Effect of mixture containing 20 per cent tannic acid and 80 per cent NaOH on gel strength. Proportion of chemical by weight of total solids follows: Line No. 1, 0 per cent; No. 2, .11 per cent; No. 3, .34 per cent; No. 4, .57 per cent; No. 5, .90 per cent; No. 6, 1.25 per cent; No. 7, 1.90 per cent; No. 8, 2.6 per cent

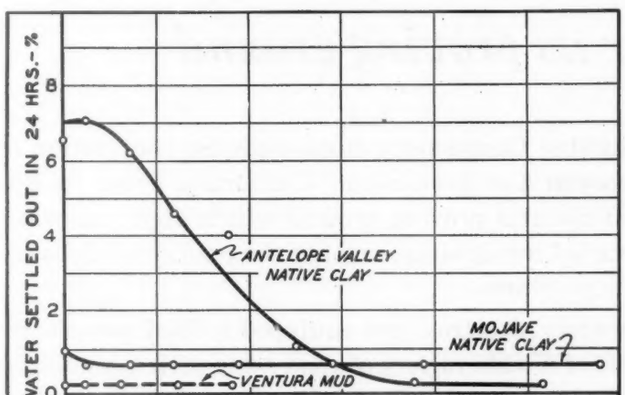

Fig. 6—Effect of mixture containing 20 per cent tannic acid and 80 per cent NaOH on water settling out

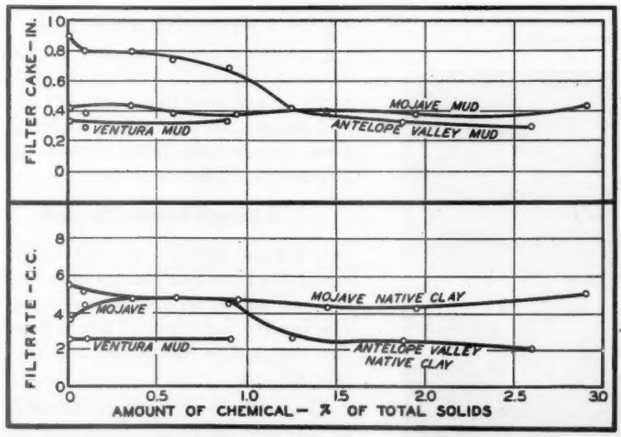

Fig. 7—Effect of mixture containing 20 per cent tannic acid and 80 per cent NaOH on filter cake and filtrate

Yield Point and Initial Gel Strength

The results of chemical treatment, as determined by the yield point and initial gel strength, were found to be practically the same. Any action of the chemical, as determined by the yield point, was found to be similar when determined by the initial gel strength. Therefore, the use of some sort of spring balance, as previously described, might well be made as a method of determining initial, and probably 10-minute, gel strength. Such an instrument could be made small and compact for transport and convenient use in the field.

From Figures 6 and 7, which illustrate the effect of the chemical on water settling and filter-cake, it may be seen that there is no relationship between these properties of the muds and pH. Inasmuch as the chemical has the same general effect on the amount of water settling out on the filter-cake and on the amount of filtrate, these properties, for the purposes of this paper, will be denoted as the stability of the mud. The pH does not have any relationship to the stability of the mud.

Stability and Rate of Gelation

According to Evans and Reid,[5] the thickness of filter-cake is not comparable to the amount of water settling out of the mud when left undisturbed in a container. They consider that a mud with a high rate of gelation would have less water separation than one with a lower rate, but also would have a thicker filter-cake than the latter. From the tests performed, the muds with the higher rates of gelation were found to have thinner filter cakes as well as less water separation, than muds with a lower rate of gelation.

Stability

It should be mentioned that if a mud is stable, the addition of a chemical, even in excess, has little or no effect. However, if the mud is unstable the chemical causes greater stability, even when added in excess. These results are contrary to those given by Ambrose and Loomis,[6] although it should be noted that their article uses the term "rate of settling" instead of "stability." A comparison between Figures 6 and 7 and Figure 2 reveals no relationship between viscosity and stability.

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MAPPING

(Continued from Page 46)

intervals show up and may be corrected or taken into account. On the cross sections a key bed is selected and extended, where necessary, at its proper interval with reference to other beds above or below. On a fresh sheet of tracing paper placed over the other the elevations of the key bed are laid out along the lines of each of the cross sections. Then a single system of structural contours with these elevations is finally drawn to agree with the average directions of the contours of all the individual beds. A very sensitive structural picture is the result.

A convenient final form for the mapping of a region has been found to be a photo-mosaic on the same scale as that of the contact prints. On to this under the stereoscope is transferred, with all the accuracy of tracing, the areal geology. The final structural contours are then drafted directly onto the mosaic or onto a tracing vellum plat made from it. The result then is a photograph of the region with superimposed geology and structural contours.

Application of Aerial Mapping

It is probably no exaggeration to say that aerial photography will in the next few years revolutionize the entire field of mapping. It has already done so to a considerable extent in Canada and Europe and is beginning to become important in this country. The particular technique described in the present paper is felt to open a new field in geology, a new exploration method for the economic geologist, and a new mapping method for state and national surveys.

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This list provides simply a good introduction to the literature on photogrammetry. It makes no pretentions to completeness.

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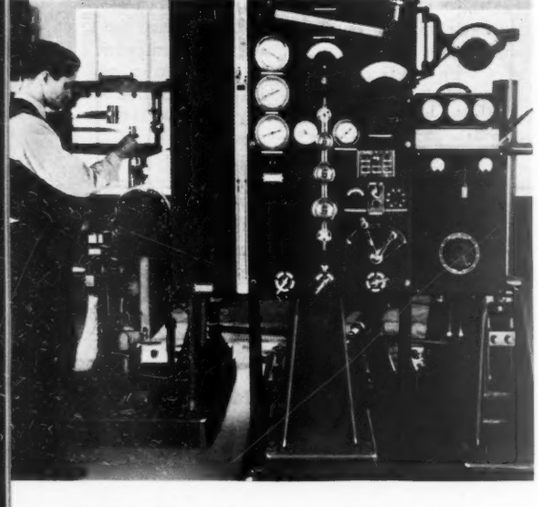
THIS NEW RESEARCH LABORATORY of the Ethyl Gasoline Corporation is located at San Bernardino, California. The accompanying mountain scene, photographed from the summit of Cajon Pass, shows part of one of the routes used by vehicles for road tests.

ANNOUNCING A NEW LABORATORY FOR

with a miniature "United States" for its proving ground



SPARK PLUG RESISTANCE and firing voltage during actual engine operation are determined by means of this special equipment.

THE Ethyl Gasoline Corporation announces the completion of a new laboratory at San Bernardino, California. From its doors stretches a great natural proving ground which approximates, in its remarkably varied topography, most of the road conditions to be found in the United States.

This new laboratory, designed and equipped to facilitate the conduct and analysis of a wide variety of road tests with a high degree of precision, supplements the Ethyl Gasoline Corporation's research laboratories at Detroit. It is a tangible expression of a conviction that the next ten years will bring the greatest progress yet seen in the development of fuels and engines.

THE GARAGE has eight gasoline-dispensing pumps, each supplied from a separate 1000-gallon underground tank. Complete facilities for vehicle maintenance, repair, lubrication and washing are also available.

THIS enterprise is the result of a search of several years for a locality having a sufficiently wide range of topography and climate to permit tests on fuels and engines the year round under conditions approaching those encountered in any section of the country.

A Unique Proving Ground

The natural proving ground finally selected lies near San Bernardino, California, and covers an area that includes the San Jacinto, San Gabriel, Santa Ana, and San Bernardino Mountains and the Mojave Desert.

The roads which traverse this area drop to 200 feet below sea level and rise to 7000 feet above. They vary from the billiard table flatness of a dry lake bed to 12% grades encountered in a 36-mile climb. Temperatures vary from blistering desert heat as high as 115 degrees F. to

DIMENSIONS of PIPESTILLS

By W. L. Nelson

The design of large engineering equipment is fraught with so many details, each of which clamor for attention, that seldom can the engineer find time to consider each of them carefully. One important point, however—the relation of overall dimensions and tube arrangement to the total cost of a pipestill—has not been publicly appraised. Thus, for a fixed amount of surface, a still containing very long tubes may cost much less than a still employing short tubes, or vice versa. Many elements of cost are involved in the building of a pipestill but some of these are so important compared to others that they govern the total cost to a large extent. The relaivety high cost of return bends is certainly one of the primary factors. Return bends may be appraised from the standpoint of cost by comparing their cost with the cost of other common pipestill elements. The cost of one return bend is equivalent to the following amounts of other pipestill parts:

About 18 linear feet of tubing.
3 to 4 square feet of roof including tile, steel, roof, etc.
12 to 13 square feet of floor, foundations, etc.
4 to 5 square feet of walls, header boxes, etc.

Mathematical Analysis

Consideration of the relative values of these several factors indicates that a considerable amount of furnace can be built by the elimination of even a few bends or that floor is far cheaper than walls or roof. However, to attain the most profitable balance of these factors against one another is an almost endless endeavor unless recourse is made to a mathematical analysis of the problem. In this paper, a study of these factors as applied to a single type of still is presented for the purpose of illustrating the most economical inside dimensions for housing this particular arrangement of surface. Although some arrangements of surface are more satisfactory than others from the standpoint of combustion or heating theory, the general type of study here offered is not limited to this single type of still but may with modifications be applied to either the poorest or the best types of stills.

This type of study was first made many years ago, and it has been gratifying to note during the last few years, a gradual understanding by manufacturers of the cheaper construction that is possible with long tubes. In 1928 tube lengths of 30 feet were seldom used, whereas today many stills utilize tubes of a length exceeding 45 feet. As an illustration, one commercial still of 30,000,000 B.t.u. capacity having tubes 24 feet long could have been built at a saving of $8,000 had 45-foot tubes been used.

For this study it is necessary to describe the dimensions of the still in terms of the tube length. The inside dimensions are used throughout so that confusion will not arise over wall thicknesses, etc. The general still arrangement is indicated in Figure 1. This is not a common tube arrangement, but other arrangements can be studied even more easily than the one presented here. The following symbols are employed:

L = total effective length of all radiant tubing, feet
L' = total effective length of all convection tubing, feet
l = effective length of tubes (both sections), feet
T_p = tube pitch in radiant section, inches
T_p' = tube pitch in convection section, inches
W = weight of tubes, radiant, pounds per linear foot
W' = weight of tubes, convection, pounds per linear foot
C = total cost of still, dollars
C_t = cost of tubes, dollars per pound
C_B = cost of bends, radiant, dollars each
C_B' = cost of bends, convection, dollars each
C_S = cost of radiant tube supports, dollars per tube per support
C_S' = cost of convection tube supports, dollars per tube per support
C_{RF} = cost of roof, convection partition, and floor (complete), dollars per square foot
C_W = cost of walls (complete), dollars per square foot
C_M = Cost of miscellaneous parts that are dependent on capacity such as burners, openings, part of piping, etc., dollars per foot of tubing
C_F = cost of fixed supervision, engineering, overhead, etc., which are mainly independent of size

The cost of tubes and bends may be described as follows:

Cost of tubes and bends

$$= \frac{L}{l}(l+1.5)WC_t + \frac{L}{l}C_B + \frac{L'}{l}(l+1.5)W'C_t + \frac{L'}{l}C_B' \quad (1)$$

$$= (LW+L'W')C_t + \frac{1}{l}[1.5C_t(LW+L'W') + LC_B + L'C_B'] \quad (2)$$

In these equations the L/l term represents number of tubes and the 1.5 term is length of tube that extends through the walls.

In determining the cost of the roof and floor, one dimension is the effective tube length (l), but the other dimension, that is the width, is more complicated:

$$\text{Width} = 0.67\left(\frac{L}{2l}+1\right)\frac{T_p}{12} + 5 \quad (3)$$

In this statement it is assumed that two-thirds (0.67) of the radiant tubes are placed in the roof, that two rows of roof tubes are used in the radiant section and 5 feet are allowed for structural steel and for gases to pass into the convection section. In Equation 4 the plus 1 term of Equation 3 is left out in order to simplify the equations:

$$\text{Cost of roof and floor} = l\left(.67\frac{L}{2l}\frac{T_p}{12} + 5\right)C_{RF} \quad (4)$$

$$= 0.0277LT_pC_{RF} + 5lC_{RF} \quad (5)$$

Statements of the wall dimensions involve the height of the still. The height includes 6 feet for burner space, etc., space for one-third of the radiant tubes and an average of six rows of convection tubes.

Cost of front and back walls

$$= 2l\left(6 + .33\frac{L}{2l}\frac{T_p}{12} + \frac{6}{12}T_p'\right)C_W \quad (6)$$

$$= 12lC_W + 0.0277LT_pC_W + T_p'lC_W \quad (7)$$

Cost of sides

$$= 2\left(6 + .33\frac{L}{2l}\frac{T_p}{12} + \frac{6}{12}T_p'\right)\left(.67\frac{L}{2l}\frac{T_p}{12} + 5\right)C_W \quad (8)$$

$$= \frac{1}{l}(.00078L^2T_p^2C_W) + \frac{1}{l}(.469LT_pC_W + .0277LT_pT_p'C_W) + (5T_p'+60)C_W \quad (9)$$

(Continued on Page 72)

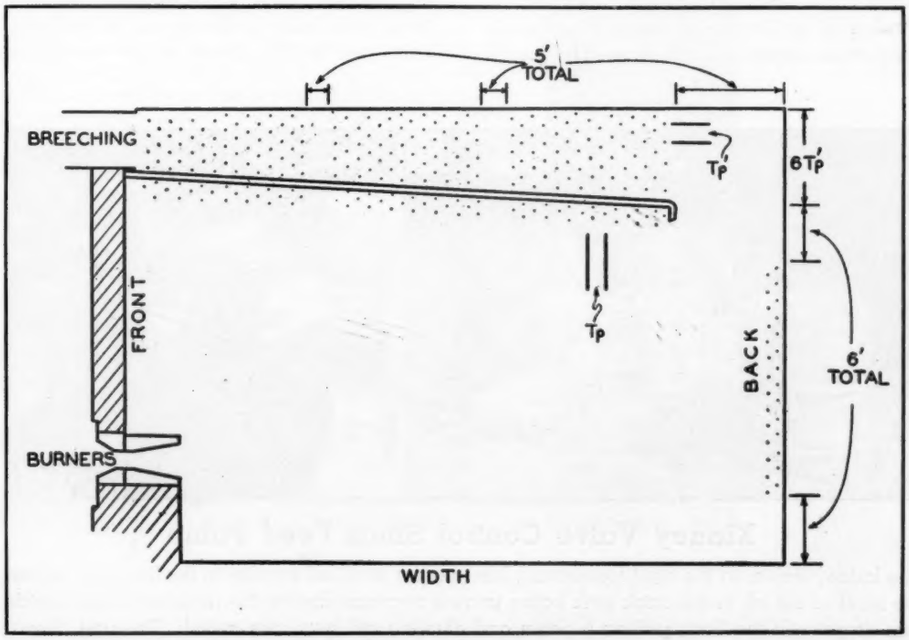
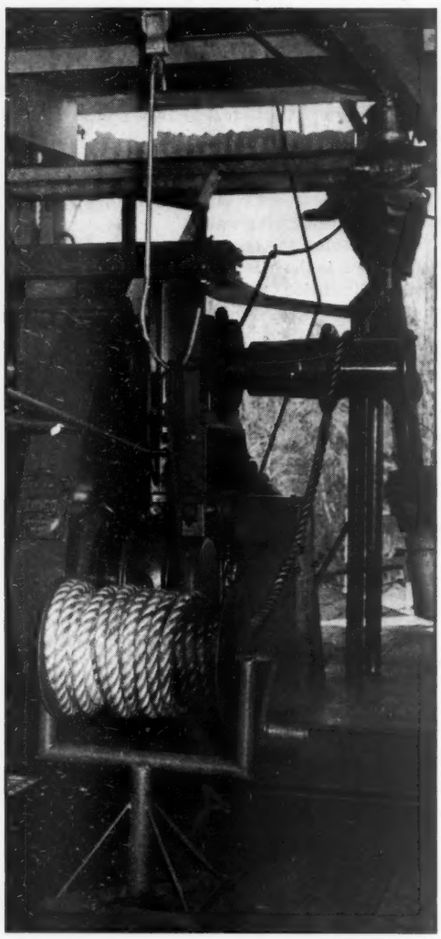


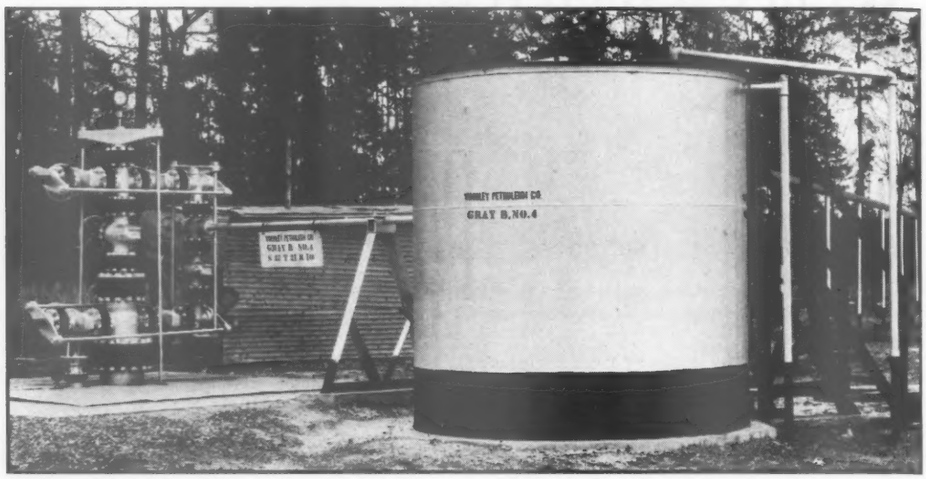
Fig. 1—Tube Arrangement

OPERATING IDEAS



Revolving Reel for Catline

Breakage of catlines is reduced by proper care which prevents kinking and consequent injury to the fibers on this Gulf Coast rig. It consists of a T-frame of 2-inch pipe which supports the spool and is supported by inserting it in a pedestal having an upright of 2½-inch pipe; the frame and spool can be rotated, and twist, due to the catline being wound around the cathead, can be eliminated. Just above it can be seen the old method of doing the same thing. The piece of sucker rod is hung in an eye swivel, the catline hangs on the lower loop and pulling the line over hanger removes twist.



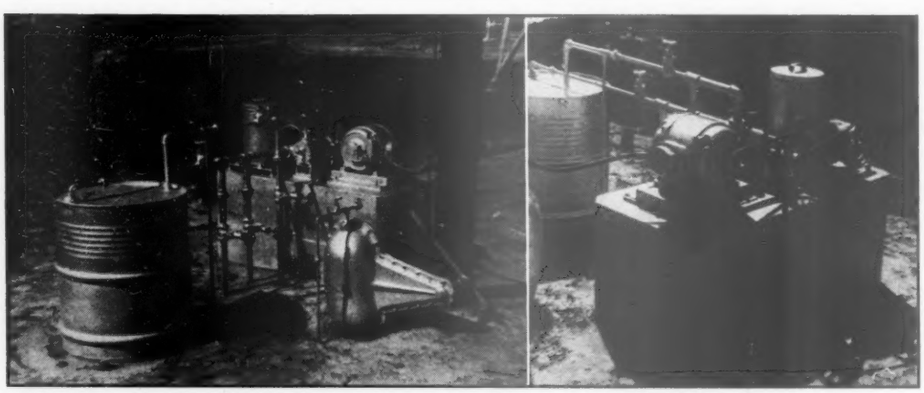
Treating Tank Near Well

In the Cotton Valley field, Louisiana, an operator has a 50-bbl. treating tank placed near the well producing the oil which is treated. Oil is circulated through hot water in the tank; heat of the water is maintained at a temperature between 120° and 140° F. The heater is placed more than 100 feet away from the treating tank. By placing the treating tank near the well, the operator avoids the increase in emulsion content which sometimes occurs when oil is conducted through long lines to tank batteries on producing properties.

Bypasses on East Texas Well

As reservoir pressure decreases in the East Texas field, many wells are put on the pump before the entire allowable production requires artificial lift. On one lease wells are pumped for a period of 15 minutes to half an hour, thoroughly agitating the column of fluid standing in the tubing. After thorough agitation it was found that the wells would tend to continue flowing through the pump,

but that it was necessary to pinch down on the flow gate so closely that accurate regulation was extremely difficult. The problem of flow control was solved by welding quarter-inch nipples into the 2-inch flow line on both sides of the gate; these nipples are equipped with globe valves. With agitation completed, the 2-inch gate is closed, and flow is maintained through one or both of the quarter-inch bypass lines, depending upon the ability of the well to continue producing. By regulating one or both of these bypass lines, the well can be flowed until the prorated amount has been secured. Such bypass lines do not interfere with normal pumping operations, nor must they be removed when the declining reservoir pressure demands that the entire production be pumped.



Kidney Valve Control Shuts Feed Pump

The kidney valve, in the right foreground, has an arm attached parallel to the float arm. When the level of the oil in the stock tank being treated decreases below the float level, the outside arm drops with the float, pulling a chain and shutting off the motor switch. The unit shown consists of a small 1-hp. motor, a gear pump, and a chemical feed pump.

LARKIN *Float Shoes*

Note—in Fig. 421—that the Valve and Guide are made of Genuine Fabric Base Bakelite—the famous *impact* material, obtainable *only* in Larkin Equipment. The valve shown, the mechanically-correct Poppet-Type, is machined and lapped, hence absolutely watertight. If you prefer the new Larkin Ball-and-Seat Type Valve—it's made of Bakelite, too. And the strong, tough, shockproof guide will be there to the bottom, solid and intact—yet easily pulverized when you start to drill!

Fig. 421

Also note—in Fig. 421—the large opening (7 square inches in the 7″ OD size) entirely through the valve and guide. It's a considerably larger opening than can be secured in any other equipment. This detail, characteristic of all Larkin Floating Equipment, makes Larkin engineered equipment absolutely foolproof. That's why it requires less pressure to force down the cement plug than with any other make.

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Preventing and Removing

Gas Hydrate Formations

in Natural Gas Pipe Lines

By E. G. HAMMERSCHMIDT
Texoma Natural Gas Co.

The role of gas hydrates in natural gas systems was first reported by Hammerschmidt, who also discovered the hitherto unknown hydrates of propane and isobutane.[2] This work has been substantially checked by a joint investigation of the U. S. Bureau of Mines and the American Gas Association, under the supervision of W. M. Deaton and E. M. Frost, who are now continuing the study of gas hydrates and their relation to the operation of natural gas pipe lines.[1]

After the cause of freezing in natural gas pipe lines was better understood, gas distribution companies as a whole found that it was desirable to install dehumidification plants on many of their high-pressure trunk lines in order to prevent the formation of gas hydrates. For economic reasons, however, there are many cases where a dehumidification plant is not warranted. Such cases as the following might be included in this category: (1) Gathering systems, (2) small distribution systems, (3) distribution systems that operate where climatic or pressure conditions induce hydrate formation only at infrequent and short intervals. (4) at points where hydrate formation is concentrated over a small area such as at regulator stations, meter runs, and aboveground piping. (5) emergency repairs of main line breaks under adverse surface water conditions. In the above cases it is often inconvenient and sometimes impossible from an operating standpoint to control the formation of gas hydrates by manipulating the temperature or the pressure of the affected gas line. The addition of antifreeze compounds is another alternative that may be employed. Publications regarding the use of antifreeze compounds for preventing hydrate formation are very few indeed. Russell has described some of the effects of adding ammonia to the gas stream.[3] Alcohol has been used by many gas companies for clearing of lines, but the application of alcohol has usually been a rather haphazard procedure that has met with varying degrees of success. Published data regarding the use of alcohol seem to be entirely lacking. It is obvious that additional information is needed in order to make an intelligent application of the antifreeze method for the solution of gas hydrate problems.

A.G.A.—Presented before Natural Gas Section of the American Gas Association, Tulsa, May 8 to 11, 1939

If a foreign substance is dissolved in a pure liquid, it will lower the freezing point of the pure liquid a definite amount. The law of freezing point depression states that this depression in freezing point is directly proportional to the weight of dissolved substance in a given amount of solvent. In order to apply this law to the freezing point lowering in gas hydrate systems, it was necessary to experimentally determine a constant for the equation which expresses this law. The constant in the following equation is the average value that was obtained from more than 100 experimental determinations of the freezing point lowering in a gas hydrate system which contained either methanol, ethanol, isopropanol, or ammonia, in concentrations that ranged from 5 to 20 weight per cent of the antifreeze compound.

$$d = \frac{2335\,W}{100M - MW} \qquad (1)$$

d = °F. lowering of the freezing point of the gas hydrate.
M = molecular weight of the antifreeze.
W = weight per cent antifreeze compound.

Equation 1 is applicable to nonassociating compounds such as most organic materials and ammonia. However, a correction must be made for compounds such as acids, bases, and salts because they dissociate when dissolved in water. For example, one molecule of calcium chloride dissociates to form one calcium and two chloride

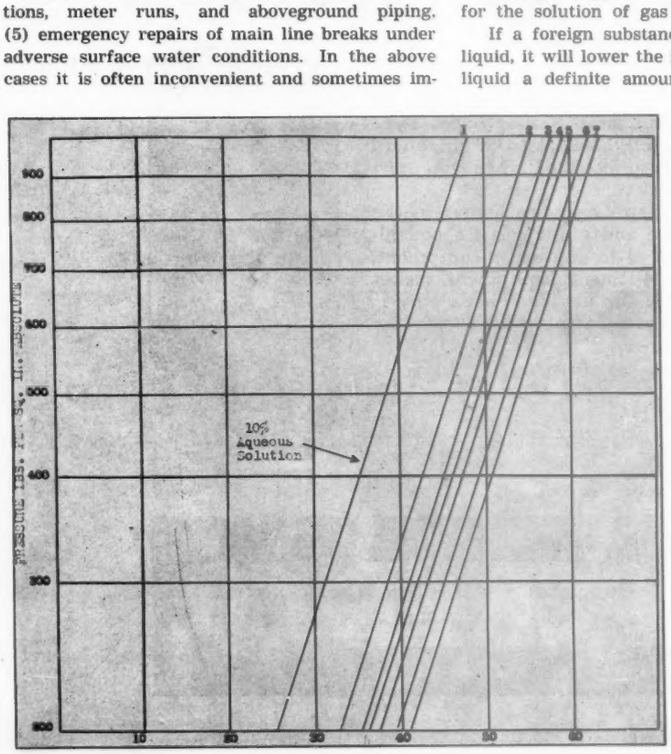

Fig. 1—Gas hydrate decomposition temperature °F.

1 Ammonia (NH_3) *2* Methanol (CH_3OH) *3* Ethanol (C_2H_5OH) and calcium chloride ($CaCl_2$) *4* *n*-Propanol (C_3H_7OH) *5* Ammonium bicarbonate (NH_4HCO_3) *6* Acetone (CH_3COCH_3) *7* Pure water

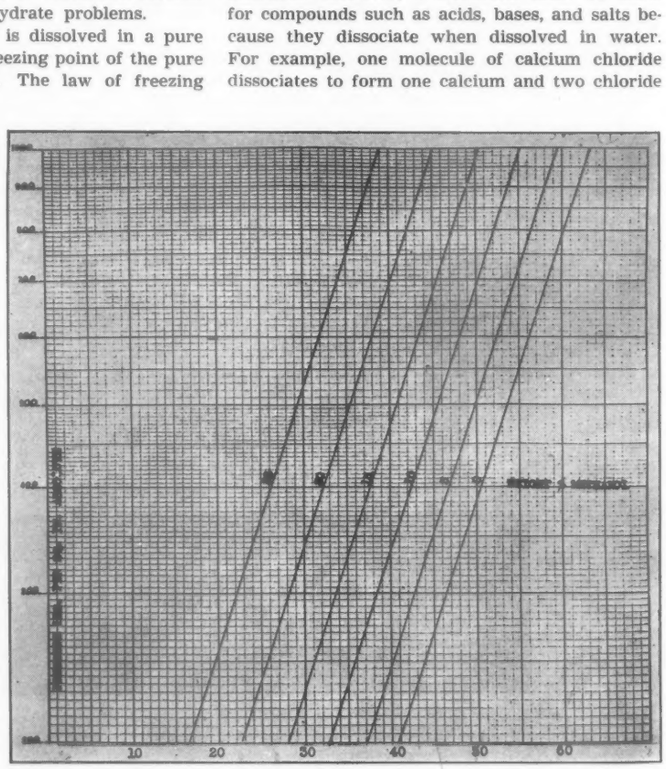

Figure 2

ions. In cases of this type, Equation 1 may be corrected in the following manner:

$$M_o = \frac{M_t}{i\,(n-1)\,+\,1} \qquad (2)$$

M_o = Molecular weight, calculated from the freezing point depression.
M_t = Molecular weight from chemical formula.
i = Degree of ionization (dissociation).
n = Number of ions formed from each molecule of the solute.

In the example under consideration, $n = 3$, $M_t = 110.98$, and i, the degree of ionization of calcium chloride (obtained from a chemical handbook) is 0.72. Solving Equation 2 we obtain $M_o = 45.48$. Then, the freezing point lowering d, in Equation 1 may be calculated for calcium chloride solutions by substituting the value of M_o in Equation 2 for M in Equation 1.

Effectiveness of Antifreeze Compounds

The relative effectiveness of various kinds of antifreeze compounds in 10 per cent solutions is shown in Figure 1. Although ammonia appears to be outstanding in its antifreeze properties, there are many cases where it could not be successfully applied in pipe line operation. The principal reason for this is that most natural gas contains some carbon dioxide. Ammonia will react with carbon dioxide in the presence of water to form a carbonate of ammonia. The carbonates are relatively poor antifreeze compounds. They are also solids which may cause stoppages in the line when the water is evaporated from them. As an example, about 4 tons of ammonia were injected into a 24-inch main line at the rate of 6 to 9 pounds per million cubic feet, in an attempt to remove a constriction caused by gas hydrates. Little fluid was removed from the pipe line and yet only 0.7 pound of ammonia per million cubic feet remained in the gas stream at a point 90 miles from the place of injection. Later, large quantities of the solid carbonates of ammonia were removed from the pipe line. The gas in this pipe line contained approximately 0.1 per cent carbon dioxide. The small residue of ammonia in this gas was apparently the amount required for equilibrium conditions with the carbonate mixture in the pipe line. Another disadvantage of ammonia is the fact that aqueous solutions of ammonia are corrosive to brass, with the result that brass after-coolers, valves, regulator parts or other appliances that are constructed of brass are likely to be corroded.

Methanol is an effective antifreeze compound, and it has several desirable properties that make it well suited for use in the control of hydrate formation. It is noncorrosive, it does not react chemically with any constituent of the gas, it is soluble in all proportions with water, it is readily procurable and reasonable in cost, and it is 100 per cent volatile under pipe line conditions, so that a solid residue cannot be deposited if partial or total vaporization of the fluid in the line takes place. Its vapor pressure is greater than water, thereby preventing the deposition of additional moisture such as would occur if a lower vapor pressure fluid were present, e.g. aqueous calcium chloride solutions.

In general, the effectiveness of an antifreeze compound will depend upon its concentration in the liquid phase. The freezing point lowering of gas hydrates in methanol solutions has been calculated from Equation 1 and the results are presented graphically in Figure 2. (Figure 2 should be revised when it is to be applied to natural gas systems where the hydrate decomposition temperatures differ from the 0 per cent line.) Since the amount of water and hydrate that may be lying in a pipe line is nearly always unknown, the use of Figure 2 will have limited application unless some other means can be provided to supply the necessary information for practical application. This additional information is supplied in Figure 3, which shows the experimentally determined equilibrium conditions between the methanol vapor in the gas stream and the methanol in the fluid at various pressures and temperatures. To illustrate the use of these curves by a specific example, suppose that it is desired to protect or free a pipe line from hydrate formation when the line pressure and temperature are 400 lbs. per sq. in. and 40° F., respectively. Referring to Figure 2, the required concentration of methanol in the liquid phase at 40° F. and 400 lbs. per sq. in., is found to be 12.5 per cent. Then referring to Figure 3, the amount of methanol in the vapor phase which is in equilibrium with a 12.5 per cent methanol solution at 40° F. and at 400 lbs. per sq. in. total pressure is found to be 20.5 pounds per million cubic feet of gas. In other words, if the methanol content of the gas stream is adjusted so that it contains 20.5 pounds methanol per million cubic feet, the hydrate and water mixture in the line will absorb methanol vapor until the resultant fluid contains 12.5 per cent methanol. Normally, the amount of methanol that is required in the vapor phase for any specific case will be considerably less than the amount of methanol vapor that would be contained in a gas that is saturated with methanol vapor at the same temperature and pressure (Figure 4).

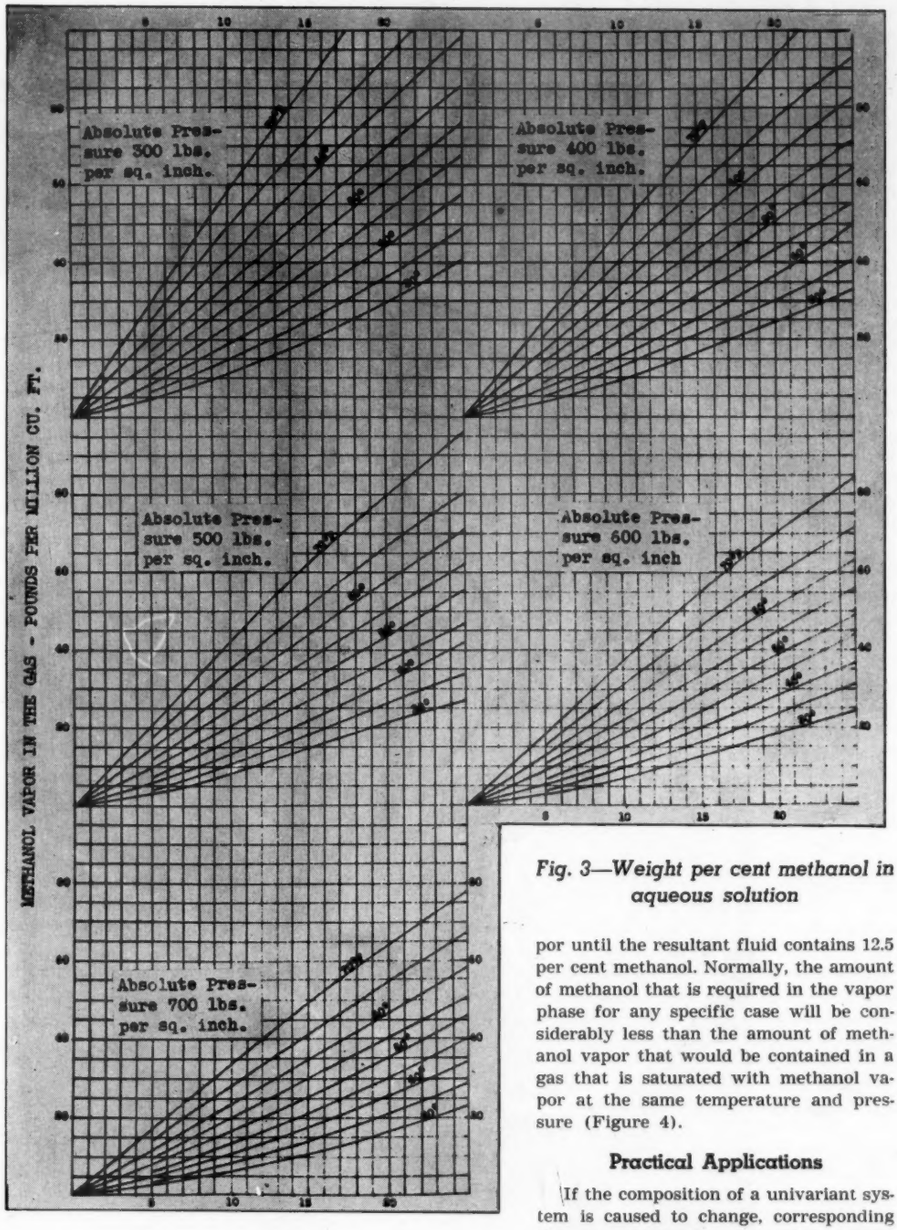
METHANOL VAPOR IN THE GAS - POUNDS PER MILLION CU. FT.
Absolute Pressure 300 lbs. per sq. inch.
Absolute Pressure 400 lbs. per sq. inch.
Absolute Pressure 500 lbs. per sq. inch.
Absolute Pressure 600 lbs. per sq. inch
Absolute Pressure 700 lbs. per sq. inch.

Fig. 3—Weight per cent methanol in aqueous solution

Practical Applications

If the composition of a univariant system is caused to change, corresponding changes of temperature must ensue. Thus, when ice is added to a solution of salt water, the ice must melt and the temperature must fall. Similar results are obtained when ammonia, alcohol, and other antifreeze compounds are added to a mixture of ice and water. If this type of cooling takes place within a pipe line, it would cause a lowering in temperature of the hydrate and fluid in the line and hence larger quantities of the antifreeze compound would have to be added in order to melt the hydrate. In order to nullify this cooling effect, full advantage should be taken of the heat of solution and the latent heat of vaporization of the antifreeze compound. When liquid methanol, for example, is mixed with water the evolution of heat amounts to 112 B.t.u. per pound of methanol. Also, when methanol vapor is absorbed in water there is an additional amount of heat evolved equivalent to its latent heat of vaporization, which amounts to 512 B.t.u. per pound of methanol. In order to utilize the latent heat, provision must be made to completely vaporize the antifreeze compound before it reaches the hydrate formation in the pipe line.

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pipe line which contains flowing gas will usually prove to be much more effective and economical than when it is pumped or lubricated into the line in liquid form. The reason for this is probably due to better and more uniform contact of antifreeze vapor with the hydrate as well as the heating effect which was described above. As a matter of fact, the introduction of liquid alcohol into a pipe line may fail to produce beneficial results, whereas the introduction of alcohol vapor into the same line and under the same conditions may be entirely successful in removing gas hydrates.

An antifreeze compound may be vaporized by atomization as in a spray nozzle. In this case the heat, which is equivalent to its latent heat of vaporization, is absorbed and the vaporized antifreeze compound is thus cooled. Normally this cooling effect will not be harmful because the gas is present in such large amounts, in comparison with the antifreeze compound, that the cooling effect is quickly dissipated. (When the same antifreeze vapors are later absorbed by hydrate formation, the resultant heating effect is not dissipated so rapidly as the cooling effect because of localization of such heating at the points where condensate and hydrate are deposited in the line.) Sometimes conditions may arise when it would be desirable to provide heat at the point of atomization of the antifreeze compound in order to nullify the cooling due to vaporization.

If a pipe line must be operated at full capacity most of the time, it will probably be necessary to provide for continuous injection of an antifreeze compound. On the other hand, if the pipe line is not loaded, it may be possible to reduce the quantity of antifreeze by intermittent injection.

Table 1 shows some test data from a 15-inch pipe line that was delivering 1,300,000 cu. ft. per hour and operating at 325 lbs. per sq. in. pressure with 42° F. ground temperature. Hydrate had formed in a 3.2-mile section of this line, and no fluid could be drained from any of the four drips in this section of the line. On March 2, 17½ gallons of methanol were atomized in this section of the line during a two-hour period. On March 3 58½ gallons of methanol were added in the same manner during a six-hour period. At the end of the second period of injection, all of the drips were producing fluid—approximately 300 gallons total—and the efficiency of the pipe line increased from 71 to 84 per cent.

A 2-mile section of 10-inch line that was operating at approximately the same temperature and pressure as in the above case, was so badly plugged with hydrates that it caused a pressure drop of 140 lbs. per sq. in. The constriction was completely removed after 15 hours' injection of methanol at the rate of 10 gallons per hour.

Hydrate formation was prevented in a 2½-mile section of 12-inch pipe line by continuous injection of methanol at the rate of 1.9 gallons per million cubic feet. This line was delivering approximately 26 million cubic feet per day at a line pressure of 360 lbs. per sq. in. and ground temperature of 46° F. The first drip beyond the point of injection was dry but the remaining seven drips produced fluid each day. The methanol content of the gas was reduced from 1.9 gallons per million cubic feet at the point of injection to 0.7 gallon at the end of the 2½-mile section.

In the above discussion it has been shown that antifreeze vapors are gradually removed from the gas as it moves downstream. This is due to the absorption of such vapors by moisture or hydrates in the pipe line. Consequently, the concentration of antifreeze vapor will ultimately be decreased to a point where insufficient protection against hydrate formation occurs. In order to accurately determine when this point has been reached, it is desirable to determine by analysis the amount of the antifreeze vapor in the flowing gas at various points along the line. Ammonia vapor may be determined by passing a measured quantity of the gas through an absorption tube which contains a measured amount of standardized acid solution and then back titrating the excess acid with a standardized solution of a base such as sodium hydroxide.

Inasmuch as there was no published method for the measurement of alcohol vapors in natural gas, it was necessary to develop a procedure that could be applied to pipe line conditions. The details of this method are described below, and a diagram of the special details of the apparatus is shown at the extreme right side of Figure 5. The remainder of Figure 5 indicates the experimental apparatus that was used to determine the data in Figure 3 and, with some modifications, it was also used to determine the constant in Equation 1.

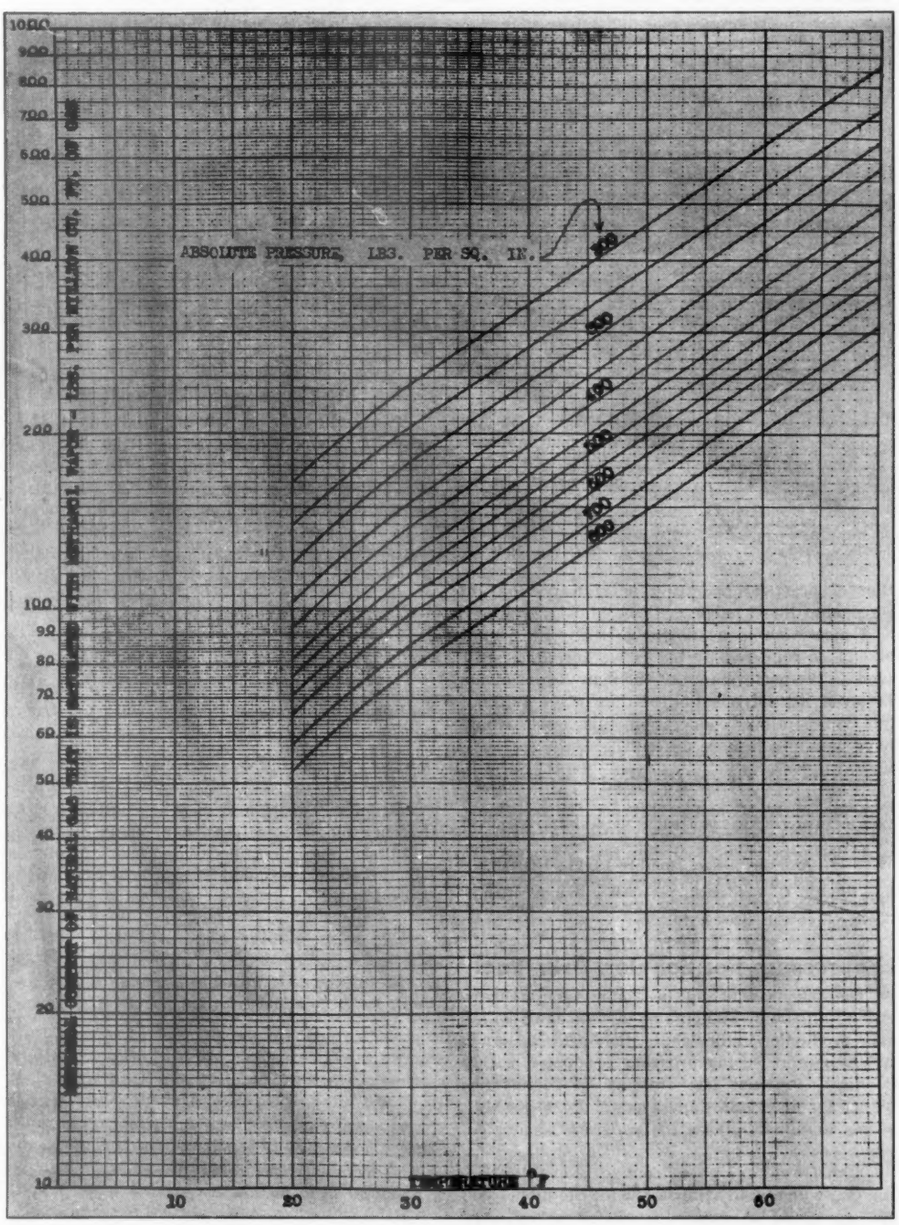

Figure 4

Determination of Methanol Vapor in Natural Gas

Methanol vapor may be removed from natural gas by conducting the gaseous mixture through a tube of anhydrous magnesium perchlorate. This product, which is sometimes sold under the trade names "Dehydrite" or "Anhydrone," will be referred to hereinafter as Dehydrite. The Dehydrite, which absorbs all of the methanol, is then dissolved in a standard solution of chromic acid and the amount of absorbed methanol is calculated from the amount of chromic acid that is consumed. Alcohol vapors may be absorbed by the Dehydrite at atmospheric pressure, but much time can be saved if the absorption is made at line pressures.

In Figure 5, glass tube (13) is 7½ inches in overall length and 0.6 inch inside diameter. A piece of capillary glass tubing one-quarter inch in length is sealed to the lower end in order to prevent the Dehydrite from dropping out. Allowing three-quarters inch at the top for the rubber stopper, the remaining 6½ inches of the tube will hold approximately 19 grams of Dehydrite. It may be advisable to cover rubber stopper (14) with tinfoil to prevent contact with the Dehy-

drite. After inserting the filled tube in steel nipple (11) as indicated in the diagram, outlet valve (15) is opened and connected to a meter by means of a rubber tube, and the inlet valve is cracked until a flow of about 2 cu. ft. per hour is obtained. Outlet valve (15) is then closed until the pressure in (11) becomes equal to full line pressure. The inlet valve is then opened wide and valve (15) is cracked so that the desired flow of gas passes through the meter. The following rates of flow will allow sufficient contact time for absorption of the alcohol vapors in the Dehydrite:

Absolute pressure lbs. per sq. in.	300	400	500	600	700
Rate through meter, cu. ft. per hour at 14.65 lbs. and 60° F.	12.8	17.0	21.3	25.5	29.8

After a sufficient volume of gas has passed through the apparatus, the inlet valve is closed and outlet valve (15) is adjusted so that the pressure is slowly relieved from the apparatus. The glass tube is then removed, and the contents of the tube are transferred to a 300 ml wide mouth flask which contains 25 ml of approximately 2 normal chromic acid and 10 ml of water. The flask containing the chromic acid solution should be immersed in an ice-water bath before the Dehydrite is added, and the Dehydrite should be added a small amount at a time, dissolving each portion before adding another, in order to prevent overheating. If the Dehydrite sticks in the glass tube it may be loosened by inserting a piece of wire. Any Dehydrite that remains on the wire or in the tube in washed into the chromic acid solution with 20 ml of water. The mixture is allowed to stand at room temperature for about 15 minutes, heated on a hot-water bath for 30 minutes (or allowed to stand overnight at room temperature) cooled under the water tap, transferred to a 500 ml volumetric flask, and the volume made up to 500 ml with water. To 25 ml samples of this diluted mixture, add about 3 ml of 40 per cent aqueous potassium iodide solution and titrate the liberated iodine with one-tenth normal sodium thiosulfate solution, using starch as an indicator of the endpoint. A blank test is run at the same time in order to determine the exact concentration of the chromic acid solution.

Calculation:

$$X = \frac{235\ (A-B)\ C}{D}$$

X = Lbs. methanol per million cu. ft. of gas.

A = ml sodium thiosulfate required in the blank determination.

B = ml sodium thiosulfate required in the sample.

C = Normality of sodium thiosulfate solution.

D = Cu. ft. of gas that was metered through the Dehydrite tube.

To prepare a liter of approximately 2 normal chromic acid, dissolve 74 grams of C.P. chromium trioxide (CrO_3) in 688 ml distilled water. (If any insoluble matter remains, filter through asbestos.) Add carefully, 412 ml conc. sulfuric acid.

Caution: [4,5]Do not use cotton plugs in the tube which contains the magnesium perchlorate. Do not use this method with gases that may contain mineral acids, and do not mix mineral acids with the Dehydrite unless there is more than 30 per cent water present. Avoid overheating; always add the Dehydrite to the diluted chromic acid solution, never in the reverse order.

Acknowledgment

Grateful acknowledgment is made to the West Texas Gas Co. and the Cities Service Gas Co. for their cooperation, which permitted the observation of practical operating data in portions of their pipe line systems.

I also wish to acknowledge the very helpful assistance rendered by my co-worker, R. F. Provine, in the performance of the many experiments involved in the collection of these data. Without his conscientious cooperation this work would have been much more difficult.

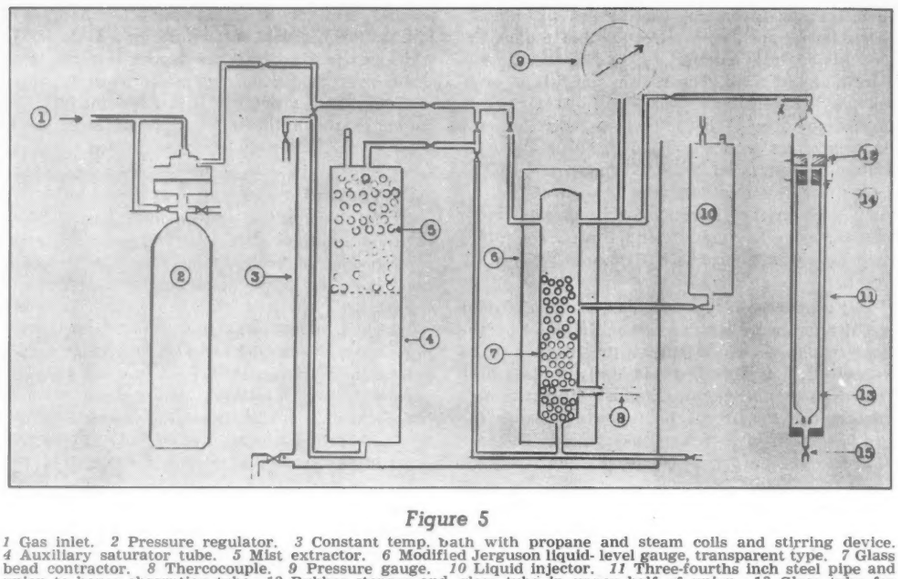

Figure 5

1 Gas inlet. *2* Pressure regulator. *3* Constant temp. bath with propane and steam coils and stirring device. *4* Auxiliary saturator tube. *5* Mist extractor. *6* Modified Jerguson liquid-level gauge, transparent type. *7* Glass bead contractor. *8* Thercocouple. *9* Pressure gauge. *10* Liquid injector. *11* Three-fourths inch steel pipe and union to house absorption tube. *12* Rubber stopper and glass tube in upper half of union. *13* Glass tube for absorbent material. *14* Rubber stopper and glass tube at inlet of absorption tube. *15* Pressure reducing valve, connected to meter with rubber tubing.

TABLE 1

Date	Time	Distance downstream from point of injection (feet)	Measured concentration of methanol in the liquid (Wt. %)	Calculated equilibrium methanol vapor in the gas, lbs. per MM cu. ft.	Approximate amount of drip fluid removed from line gallons
3-2-39	5:30 p.m.	3,833	15.25	31.4	18
3-3-39	8:30 a.m.	6,427	9.61	18.7	30
3-3-39	9:00 a.m.	10,537	4.83	8.6	5
3-3-39	2:45 p.m.	15,275	6.18	11.5	50
3-3-39	3:15 p.m.	3,833	14.20	29.3	5
3-3-39	4:45 p.m.	6,427	9.13	17.5	10
3-3-39	5:05 p.m.	12,293	6.11	11.0	2
3-3-39	5:10 p.m.	15,275	7.18	13.5	150
3-3-39	5:20 p.m.	10,537	10.86	21.0	...
3-3-39	5:30 p.m.	3,833	14.76	30.0	...

			Calculated equilibrium liquid wt. % methanol	Measured methanol vapor in the gas lbs. per MM cu. ft.
3-2-29	4-5 p.m.	17,578	6.5	11.73
3-2-39	3:30-5:30 p.m.	0	19.9	44.9
3-3-39	10 a.m.-4 p.m.	0	21.6	49.8
3-3-39	3:00 p.m.	750	18.0	40.0
3-3-39	3:30 p.m.	17,578	8.7	16.9

Literature Cited

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2. Hammerschmidt, E. G. Ind. Eng. Chem. 26, 852-55 (1934); Am. Gas Assoc. Monthly 18, 273-6 (1936).
3. Russell, J. T., Gas 13, No. 6, 38-40 (1937).
4. Smith, G. Frederick, personal communication.
5. Stross, M. J., and G. B. Zimmerman, Ind. Eng. Chem. News Ed. 1-20-39, 70.

Repressure For Schuler, Ark., Pool

The Arkansas Oil and Gas Commission is threatening to make drastic cuts or to shut down Jones' sand production in the Schuler field near El Dorado unless a repressuring program is adopted within 30 days. Pressure has dropped 45 pounds per month for five months and a loss of 25,000,000 bbls. seems imminent unless the program is adopted, engineers said.

John Howell, vice president of Lion Oil Refining Co., which is in sympathy with the move, said that gas could be obtained from Columbia County fields for the repressuring project.

PIPESTILLS

(Continued from Page 63)

Assuming that the tubes are supported at intervals of 8 feet within the still:

Cost of supports

$$= \left(\frac{l}{8} - 1\right)\frac{L}{l}C_S + \left(\frac{l}{8} - 1\right)\frac{L'}{l}C_S' \qquad (10)$$

$$= \frac{L}{8}C_S + \frac{L'}{8}C_S' - \frac{L}{l}C_S - \frac{L'}{l}C_S' \qquad (11)$$

Cost of burners, etc. $= (L+L')C_M$ (12)

Most Economical Dimensions

The total cost of the still is the sum of all of the above factors or the sum of the fixed charges C_F and Equations 2, 5, 7, 9, 11 and 12. Such an equation is so long that it has been simplified by introducing new constants A, B, D and E.

$$A = 5C_{RF} + 12C_W + T_P'C_W \qquad (13)$$

$$B = 1.5C_t(LW+L'W') + LC_S + L'C_S' + .469T_PC_W + .0277LT_PT_P'C_W - LC_S - L'C_S' \qquad (14)$$

$$D = .00078L^2T_P^2C_W \qquad (15)$$

$$E = (LW+L'W')C_t + .0277LT_P(C_{RF}+C_W) + (5T_P'+60)C_W + .125(LC_S+L'C_S') + (L+L')C_M + C_F \qquad (16)$$

In terms of these symbols the total cost (C) is:

$$C = E + \frac{B}{l} + \frac{D}{l^2} + Al \qquad (17)$$

Although Equation 17 may be used directly for determining total cost, its main value lies in the fact that it may be differentiated into a form from which the most economical length of tube can be determined.

$$\frac{dC}{dl} = O - \frac{B}{l^2} - \frac{2D}{l^3} + A \qquad (18)$$

Setting the differential form equal to zero gives the most economical tube length:

$$-\frac{B}{l^2} - \frac{2D}{l^3} + A = O \qquad (19)$$

or $$Al^3 - Bl = 2D \qquad (20)$$

The solution of the final equation for l by mathematical methods is tedious but the value of l can be determined easily by trial-and-error or graphical methods.

Examples of the application of the above formulations will be published in an early issue.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Solvent Temperature Affects Pour-Point and Melting Point

When separating wax and oil by the solvent method it is generally accepted as true that very low temperatures are especially favorable to the extraction of high melting point wax without material lowering of the pourpoint of the dewaxed oil? If the dewaxing was done at zero, would —20° produce a much lower pourpoint oil and a higher melting point wax?—S. S. B.

The crystalline paraffin wax, as now produced by refineries, does not vary in melting point over a very wide range but the lubricating oils do vary considerably in pourpoint. Relatively small quantities of wax have a marked influence on the solidifying point of an oil. The reason for this is that the wax, easily soluble in the oil, has a melting point often well above 30° to 40° above the pourpoint of many high quality oils and any trace of wax will be reflected in the pourpoint of the oil. It is the very small traces of wax that are removed by extremely low temperature dewaxing. Consequently, the pourpoint of the dewaxed oil is helped without much bearing on the melting point of the wax.

The melting points of waxes and the pourpoints of the dewaxed oils produced from the same stocks have been presented in the paper by E. A. Burch, before the American Petroleum Institute, from which the data given here have been taken.

WAX MELTING POINT AND OIL POURPOINT

Dewaxing temp., °F.	Wax M.P., °F.	Oil pourpoint, °F.
11	138.8	9
1	136.7	0
—5	135.6	—6
—16	132.8	—16

It is well known that the higher the sweating or dewaxing temperature, the higher will be the melting point of the resulting wax. As the temperature is lowered there will be a decrease in the percentage of dewaxed oil obtained and an increase in the quantity of wax.

Methylene chloride was the base solvent used in this work. Investigations indicated that through modification of the base solvent by the addition of others, a mixture adapted to quantitative separations in a single step could be prepared. Acetone, ethylene dichloride and benzol were found to be satisfactory modifying solvents for use with methylene dichloride.

Reference: E. A. Burch, Control of Wax-Distillate Quality, Amer. Pet. Inst., Chicago, November, 1938.

Oil and Gas Products Derived From Coal and Shale

Oils, naphthas and gases are obtainable from both coal and shale. Will you give me examples of the yields from these materials and the quality of the products?—H. Q. M.

The general characteristics of the hydrocarbon products, both gas and liquid, derived from coal and shale are quite similar, the chief difference being in the volumes and the percentage of each constituent obtained by retorting the new materials. The coals suitable for gas and oil production are the lignites, bituminous and semibituminous coals. These are not of uniform composition, consequently the yields will vary. The same is true as regards the several varieties of shales, which show yields from a trace of oil up to over 100 gallons a ton.

When the price of petroleum was high, about 20 years ago, much attention was given to experimental studies of the coals and shales as possible sources of hydrocarbon lubricating oils and motor fuels. The United States Bureau of Mines made an exhaustive investigation of the subject and the data used here are from one of the bureau's reports. Selection is made from the several trials with different samples on the basis of the largest yield of oil from each substance for the data in the table.

PRODUCTS FROM COAL AND SHALE

Sample—	Coal F 120	Shale Australia
Crude oil yield, gal./ton	30.8	120.56
Oil, specific gravity	0.986	0.877
A.P.I. gravity	12.0	29.9
Oil melting point, °F.	22	23
Naphtha yield, gal./ton	1.4	4.11
Gas, cu. ft./ton	2806	1121
B.t.u./cu. ft.	906	1452
Water, gal./ton	120	1.01
Viscosity at 130° F.	78	43
Initial boiling point, °C.	56	36
Distillate to 275° C., per cent	48.4	37.5

The general character of the gas made from each is indicated by the information shown in the table.

COMPOSITION OF GAS FROM COAL AND SHALE (PER CENT)

	Coal gas	Shale gas
Hydrogen sulfide	trace	1.3
Carbon dioxide	19.5	3.6
Illuminants	2.6	13.0
Hydrogen	28.3	7.0
Carbon monoxide	11.5	4.9
Methane	32.4	33.3
Ethane	...	26.9
Nitrogen	4.9	...

The loss on carbonization of American shales ranges from 11.6 per cent, yielding 16 gallons of oil per ton, to 37.2 per cent, with a yield of 63 gallons of oil per ton. The Australian shale lost 52 per cent. The yield of tops to 275° C. from the shale oil averaged 17.3 gallons per ton of shale. Average unsaturation of the tops was 40.2 per cent. Oils from shales are of better quality than those from coal.

Reference: Horne and Bauer, Comparison of Oils Derived From Coal and From Shale, U. S. Bureau of Mines, R.I. 2832, 1927.

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CHEMICALS FOR THE PETROLEUM INDUSTRY SPECIFICATIONS

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Trichlorethylene	November 24	1938
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Z		
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Characteristics of Mercaptans and Method of Extraction

Will you kindly give me the characteristics of the various mercaptans, i.e., ethyl, butyl, etc. Also, I would like any information you might be able to offer on the commercial extraction.—J. T. B.

The mercaptans are organic compounds having the general formula R.SH, meaning that the thiol group SH is attached to a radical such as CH_3 or C_2H_5 etc. The simpler ones have a characteristic objectional odor which becomes less pronounced with increasing molecular weight and higher boiling points. All are freely soluble in either alcohol or ether.

The constants for the first, or lower, mercaptans follow: Methyl mercaptan or methanethiol. Formula CH_3SH, liquid at low temperatures and gas under normal conditions, specific gravity 0.8599, melting point —123.1°, boiling point 5.8°. Slightly soluble in water.

Ethyl mercaptan or ethanethiol. Formula C_2H_5SH, liquid, index of refraction 1.43055, specific gravity 0.840, melting point —121°, boiling point 34.7°. Solumble 1.5 per cent in water.

Propyl mercaptan or 1-propanethiol. Formula $CH_3(CH_2)_2SH$, liquid, specific gravity 0.8357, melting point —111.5°, boiling point 68°. Very slightly soluble in water.

Butyl mercaptan or 1-butanethiol. Formula $CH_3CH_2)_3SH$, liquid, specific gravity 0.8365, melting point —115.9°, boiling point 98°. Trace soluble in water.

Pentyl mercaptan or amyl mercaptan or pentanethiol. Formula $CH_3(CH_2)_4SH$, index of refraction 1.44366, specific gravity 0.857, melting point —75.7°, boiling point 126°. Insoluble in water.

Hexyl mercaptan (primary normal) or hexanethiol. Formula $CH_3(CH_2)_5SH$, liquid, specific gravity 0.849, melting point —81.03°, boiling point 150°. Insoluble in water.

All temperatures given are °C.

The mercaptans react with alkalies to form mercaptides, the reaction being the basis for their removal from petroleum gases and liquids. Happel and Robertson have studied the distribution coefficients of some of the mercaptans found in raw cracked gasoline with dilute water solution of caustic soda (0.417 pound per gallon). The liquid was treated with the alkali and then fractionated and the fractions analyzed for the mercaptan.

MERCAPTAN DISTRIBUTION COEFFICIENTS BETWEEN CRACKED NAPHTHA AND AQUEOUS ALKALI

Fraction	Endpoint °F.	Mercaptan	Distribution coefficient
1	65	methyl	213
2	125	ethyl	80
3	180	propyl	10.7
4	235	butyl	3
5	280	amyl	1
6	residue	hexyl	0

It was also shown that two-stage counter-current extraction with even more dilute alkali (0.05 pound caustic per gallon) extracts the mercaptans.

The mercaptan may be released from the mercaptide by treating with acid, cooling and then distilling.

Reference: Happell and Robertson, Ind. Eng. Chem. 27, 941, 1935.

RECENT DECISIONS

(Continued from Page 25)

This is the business which has been brought to and initiated by the F.P.C. in less than one year since the law was passed. Some hearings have been held in these matters, but as yet no case has been presented to the commission which would indicate its attitude in determining rates.

The law is general in its specifications of things to be considered by the commission in arriving at a rate. Language similar to that used in the Interstate Commerce Act provides that rates charged shall be reasonable, and any unjust, unreasonable and unduly discriminatory or preferential rates are prohibited. The only direction with respect to the determination of the value of property in fixing rates is that contained in Section 6, which uses the phrase "actual legitimate cost," and then refers to other facts which bear on the determination of the fair value of the property of the natural gas company. From action taken by the F.P.C. in valuation cases pending before the U. S. Supreme Court we know that its desire is to abandon the valuation method in use for so many years, which requires that rates be fixed on the value of the property devoted to public service at the time of the inquiry. In substitution for this long-established rule, original cost is proposed under different labels.

F.P.C. Rate Cases

The F.P.C. has authorized its counsel to appear and argue this question in a number of rate cases. In 1937 it urged upon the Supreme Court the adoption of the original cost or prudent investment theory in a case involving the Pacific Gas & Electric Co. The California Commission had rejected the evidence of reproduction cost and had based its decision entirely on historical cost. The court gave the cost proponents some encouragement by holding that the methods used by a state commission were not important so long as the end arrived at was a nonconfiscatory rate. Under this rule a commission is not bound in all instances to give consideration to reproduction cost. Doubtless it was thought that as the court became more streamlined with new appointments, the final blow to the fair value principle would soon fall. However, the last attempt to encourage the U. S. Supreme Court to change this rule of value has again failed.

The case of Driscoll v. Edison Light & Power Co.,[4] decided by the court on April 17, involved a temporary rate fixed by the Pennsylvania Commission under a state law. The F.P.C. filed a brief and urged that the court abandon the formula fixed in the case of Smyth v. Ames.[5] The court again refused to do so, and reproduction cost was considered and used as a part of the evidence in arriving at the value of the property. Justice Frankfurter, while concurring in the judgment, said that the court's opinion "appears to give new vitality needlessly to the mischievous formula for fixing utility rates in Smyth v. Ames, 169 U.S. 466." Since only Justice Black concurred in the opinion read by Justice Frankfurter, I think it is fair to assume that the effort of the F.P.C. to have the court abandon the consideration of the reproduction cost of property still is unsuccessful.

There have been other matters brought before the F.P.C. under the Lea Bill, such as a number of applications for the purpose of exporting gas from Texas to Mexico and from New York State to Canada, and one application to import gas from Canada to Montana.

The law contains a provision requiring a certificate of public convenience and necessity for the construction of a natural gas pipe line into a market already served by an existing natural gas company.[6] There have been five applications of this character filed. The first one was that of Kansas Pipe Line & Gas Co., which proposes to construct a pipe line from the Hugoton field in southwestern Kansas to the Mesabi Iron Range in Minnesota, with branch and lateral lines to points in the states through which the line will pass. This application has caused considerable interest by reason of the fact that the National Bituminous Coal Commission, the National Coal Association and many retail coal associations and individual dealers, the United Mine Workers of America and the Railway Labor Executives Association, all filed applications to intervene. The applicant had requested the commission to enter an order holding that it had no jurisdiction over the proposed construction, on the ground that natural gas was not being sold in the markets which it proposed to serve. This contention was overruled, but at the same time the commission held that the coal industry had no right to participate under the statute and denied the applications to intervene. Hearings on the merits have recently been finished.

Applications to construct lines into the same general territory have also been filed by North Dakota Consumers Gas Co., which proposes to serve a number of communities in North Dakota and Minnesota, and Public Service Gas Co., which proposes the construction of a line from Montana and Wyoming through North Dakota, South Dakota and into Wisconsin. Each of the three companies involved in these applications has been permitted to intervene in the others' case.

There was filed by Louisiana-Nevada Transit Co. an application to build a pipe line from the Cotton Valley field in Webster Parish, Louisiana, to a cement plant in Howard County, Arkansas, it being intended to serve any distributing companies that desired to buy along the way. Hearings have been completed on this proposal but no decision has yet been rendered. The Arkansas-Louisiana Gas Co. strenuously opposed it.

The General Gas Pipe Line Corp. filed an application to construct a line from Kentucky to certain areas in Indiana. Hearings began on this application in April, and when the applicant found that it would be necessary to give full information concerning the gas reserves, available markets and methods of financing, the application was withdrawn.

From what I have said concerning the activities of the F.P.C., it can be seen that there will come about decisions of far-reaching effect on the gas business. The prevalence of interstate movements in natural gas gives an importance to these matters that will focus attention on the F.P.C. to the exclusion of state commission cases for some time. This is not because of the lesser importance of the decisions of the state commissions but because of the newness of the field.

State Commissions

State commissions have continued in their activities, but since their decisions generally get before the courts there need be no separation in discussion of the two jurisdictions. The State of Texas has been busy in the last few years in rate activities, and two rate cases found their way into the U. S. Supreme Court. The United Gas Public Service Co. in its case involving rates for Laredo[7] brought to the Supreme Court the question of the legality of the unusual rate case procedure which applies in Texas, namely, the trial to a jury of the appeal from the Railroad Commission's orders. Knowing the voluminous statistical information and many exhibits that are utilized in rate case testimony, it does not seem strange that the contention would be made that complicated issues, such as abound in a rate case embracing conflicting testimony of experts and many details of appraisals and operating problems, should be given a judicial review and are too involved to submit to a jury trial.

The court recognized the difficult problem, but pointed out that many cases involving complicated questions of expert testimony and voluminous records are presented in criminal cases where many times the issue of life or death is decided. Accordingly the court held that it was an appropriate method of trying a rate case.

The second Texas case which found its way to the U. S. Supreme Court last year was that of the Lone Star Gas Co. involving gate rates charged to its affiliated distributing companies in Texas.[8] This case also was tried to a jury, following the decision of the Railroad Commission of Texas, and it resulted in a verdict by the jury in favor of the company. It seems almost a miracle that a jury of consumers would actually decide that the gate rate of 32 cents fixed by the Railroad Commission was too low, but such did happen. In that case the Supreme Court decided that the transportation of gas from the Texas Panhandle through Oklahoma and back into Texas and the sale of that gas to affiliated companies, even though considered to be an interstate movement, was not an interference with interstate commerce. The inclusion of producing property in Oklahoma in the valuation was approved, the court holding that segregation of that within and that without Texas was unnecessary.

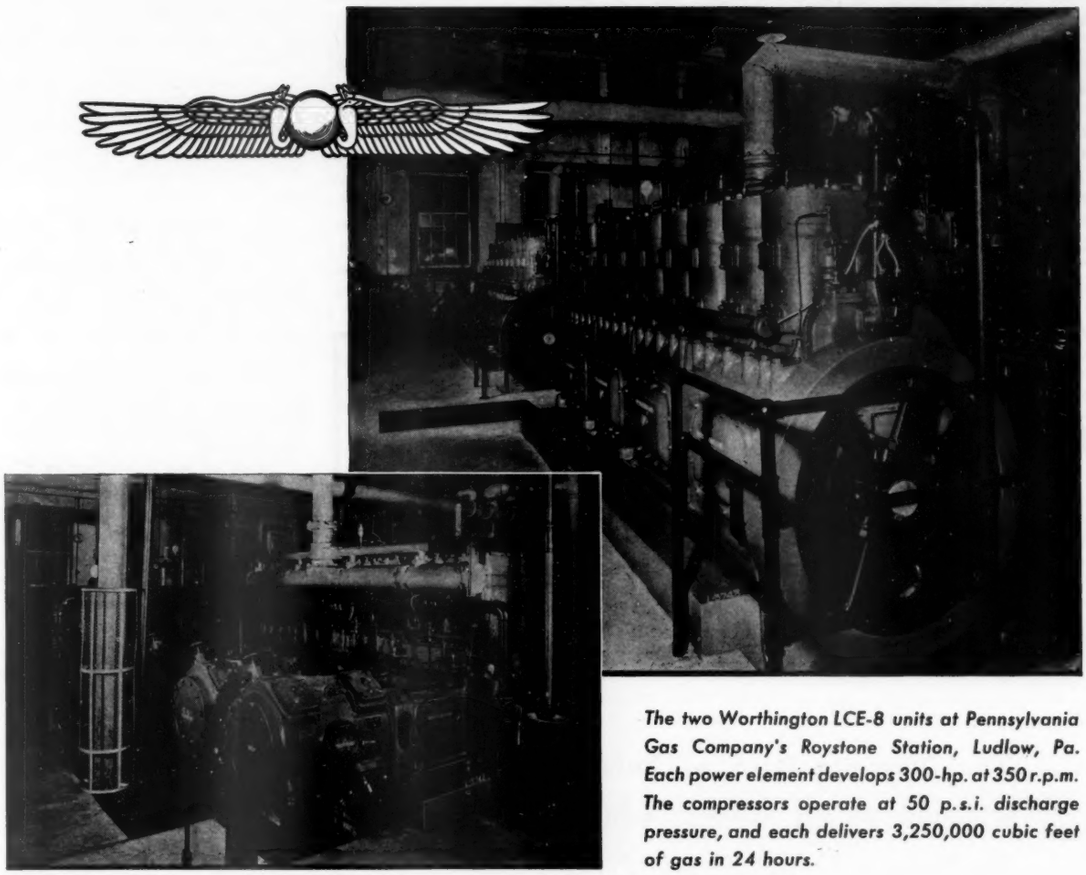
Case in Texas

The Arkansas-Louisiana Gas Co. was involved in a third case in Texas, which though not a rate case did affect the company's rate. The U. S. Supreme Court held that the city of Texarkana, Tex., could take advantage of a provision in the company's franchise, providing that any lower rate placed in effect in Texarkana, Ark., should likewise apply in Texarkana, Tex.[9] The Circuit Court of Appeals had taken the view that under the Texas law a municipality could not contract away its legislative right to regulate utility rates and that such a franchise, not being binding on the city, likewise would not bind the company. This finding, while appearing to be reasonable and fair to both sides, was held to be wrong by the Supreme Court. Even though the city could not contract away its right to raise rates, such a franchise was held binding on the utility, and the consideration for this is said to exist in the grant of the franchise. The result, however, is a rule that does not work both ways.

Moving from Texas to the State of Michigan, where Texas gas is sold by one of the long distance pipe lines, the Michigan Public Utilities Commission recently held that it had jurisdiction over the rates in effect in Detroit. The basis of the decision was that no specific schedule of rates was set forth in the contract between the city of Detroit and the Detroit City Gas Co., under which the price of gas sold in Detroit is determined. This agreement, known as the "Detroit plan," was widely discussed at the time it was made, and seemed to provide a method whereby a fair earning could be made available to the gas company, with anything in excess of that to be divided between the company and the domestic consumers. This decision of the Michigan Commission has recently been sustained by the Michigan Supreme Court,[10] so that the fate of the Detroit plan will now rest in the state commission.

The increasing tendency of both state and federal governments to subject all character of businesses to questionnaires and investigations is well known. Probably no industry has had to submit to more inconvenience and expense in pursuing this objective than has the public utility industry. Late in 1937 the U. S. Supreme Court held that the Natural Gas Pipe Line Co. of America must submit to an investigation by the Illinois Commerce Commission,[11] and was required to open its books and records to that commission, although not subject to its jurisdiction. Such was held not to be an unconstitutional proceeding and not a burden on interstate commerce.

Then early last year the U. S. Supreme Court



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decided that the Arkansas-Louisiana Gas Co.[12] had to file copies of contracts and agreements and furnish other information to the Arkansas Department of Public Utilities, although the contracts involved the sale of gas in interstate commerce and were not subject to jurisdiction of the state commission. Shortly thereafter the Petroleum Exploration Co. in Kentucky was required to submit to a full investigation by the Public Service Commission of Kentucky, although the company was not a public utility and was engaged solely in the sale of gas at wholesale to distributing companies.[13] It was there stated that the incurrence of expense involved in complying with an order of the state commission requiring the production of information and the risk of being subjected to a severe penalty for noncompliance was not the sort of irreparable injury against which a court of equity would protect, even though the expense of complying with the order was greater than that of testing out the jurisdiction of the commission in the court proceeding. It was also stated that the expense and annoyance of litigation was a part of the social burden of living under government and that the proceeding initiated by the state had to be finished before the jurisdictional question could be determined.

From these court decisions it is apparent that there has been no brake applied to the government investigators.

For some time past there has been a decided tendency on the part of the federal commissions to have the courts establish the finality of many of their orders. The point of view that seeks to prevent a judicial review of an order of an administrative body can be explained only by a desire for bureaucratic power.

There has always been embodied in our jurisprudence the right at least to one review of a trial court's judgment. The federal commissions have pursued a doctrine bearing the label "negative order," until many of the orders of administrative bodies were considered not reviewable by the courts. This doctrine was held to prevent a review of orders refusing the right to consolidate properties, or denying an application for authority to build a hydroelectric project, or denying an exemption from certain restrictions under a statute.

In three cases[14] decided on April 17, 1939, the Supreme Court of the United States in opinions rendered by Justice Frankfurter swept aside the confusion that has lately existed, and the doctrine of negative orders no longer remains. The court said:

"We conclude, therefore, that any distinction, as such, between 'negative' and 'affirmative' orders, as a touchstone of jurisdiction to review the commission's orders, serves no useful purpose, and in so far as earlier decisions have been controlled by this distinction, they can no longer be guiding."

These cases will be recognized as landmarks in the field of administrative law and will serve to make more secure the rights of parties before commissions.

There is one other group of court decisions that is of general importance to the natural gas industry, particularly to those companies engaged in operating pipe lines across state lines. The increasing tax burdens of government have caused the state taxing authorities to seek additional sources of revenue. Since interstate commerce has long been free from taxation burdens under the protection of the federal Constitution, companies engaged in interstate activities have not been subject to taxation as freely as those operating wholly in intrastate commerce. Formerly the decisions of the federal courts held to be illegal the imposition of privilege, franchise and sales taxes when no local business was carried on. Such taxes were held clearly to be burdens upon interstate commerce, and this was prohibited by the federal Constitution.

Since the change in the personnel of the Supreme Court of the United States took place there has been a weakening of the doctrine formerly held well-established, and the state taxing authorities have been permitted to make inroads against our defenses. In April 1938 the court applied this new theory to the natural gas business carried on in interstate commerce.

The State of Louisiana in 1932 enacted a license tax law requiring the payment of $1 per horsepower for the privilege of operating prime movers for the production of power. It was applied by the state authorities to natural gas companies operating compressors on interstate pipe lines. The Arkansas-Louisiana Pipe Line Co. contested the tax.[15] The industry knows that the use of a compressor is essential to moving the gas and is operated for no other reason. It would seem clear that a compressor is an essential factor to carrying on the interstate commerce and that the generation of power in the combustion chamber cannot be a separate and distinct operation from the transmission of that power to the moving gas. However, the U. S. Supreme Court was able to see a distinction in the two ends of the compressor for the purpose of taxation. It said that privileges closely connected with commerce might be regarded as distinct for the purposes of taxation and, while the combustion and compression units are assembled on a common bed plate, their functions are separate. While the use of the engine for producing power was synchronized with the transmission of that power to the compressor, the production of the power was said to occur prior to transmission and so was a local activity. The distinction was commented upon by an official of another state in this manner: If a locomotive is pulling a string of cars from one state

To the

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to another, the operation of the locomotive is in interstate commerce, but if the locomotive is pushing the cars across the state line, then a local activity that can be taxed is taking place.

It is not surprising that the court found it necessary to distinguish three cases decided within recent years under which a tax such as this would be held a burden on interstate commerce. The fact that the imposition of a state tax adds to the costs of conducting the interstate commerce is not deemed sufficient to constitute the tax an interference with that commerce. This is a departure from previous holdings and might be characterized as the beginning of a new doctrine in the field of taxation as applied to an interstate activity. So long as the same activity cannot be taxed by another state, then no burden is assumed to exist. There must be duplicate taxation on the same activity before there is such an interference with interstate commerce as would justify court protection. This protection now is not against a burden on interstate commerce but is against multiple taxation.

In this discussion reference has been made to the change in the rules laid down in court decisions relating to problems of the natural gas industry. The rules affecting our operations are no more static than is the gas that moves in our pipe lines. Forces are continually on the move to produce change, and as with individuals the only eternal verities in the natural gas business are death and taxes.

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15. Coverdale vs. Arkansas-Louisiana Pipe Line Co., 303 U. S. 604.

DEALERS

(Continued from Page 24)

the public speaker channel of contact with the thought that available personnel may or may not adapt itself to this type of treatment.

Summed up, the oil industry feels it has an intelligent, interesting and commendable story to tell the public and that the average citizen has been permitted to form many erroneous impressions about the business. The industry has cooperated almost 100 per cent in the organization and financing of a general public relations program through the American Petroleum Institute. Regional committees have been formed to blanket the entire nation and the executive committee on public relations for the A.P.I., headed by W. S. S. Rodgers of Texas Co., is holding monthly meetings to review the progress and to extend the mechanics of the program.

The central A.P.I. committee held its most recent meeting over the past week-end at French Lick, Ind. One feature of the regular meetings is the open forum in which various company representatives review their individual public relations efforts. From these forum sessions many ideas are borrowed from one another and adapted to individual problems.

There is a tendency on the part of companies to minimize individual products in certain types of advertising and to run "copy" of an institutional character. The institutional type of advertising has started within comparatively recent weeks to appear over the signature of various companies. Some are picturing the petroleum dealer and service station operator in his true light—that of an independent business man shouldering his share of community responsibility along with the carpenter, bricklayer, grocer and banker. Other institutional ads are written around the service angle of the industry at large; others feature the number of people directly deriving their living from the petroleum industry; others show generally how substantially the industry supports other lines of business, including its consumption of steel, manufactured machinery and other commodities.

The central A.P.I. committee is attempting to produce basic material for the various channels of public relations endeavor but realizes that direct application of the facts to the public rests largely in the hands of the individual companies.

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Amarillo Gas Co., P. O. Box 511, Amarillo, Tex.

R. E. Wertz, Amarillo, Tex., *Pres.* E. A. Sickels, Tulsa, Okla.; F. E. Jones, Kansas City, Mo.; M. D. Synder, Amarillo, Tex., *V. P.s.* George Baird, New York, N. Y., *Sec.* and *Treas.* S. G. Stockton, *Plant Supt.* W. W. Rusk, *Ch. Engr.* I. L. Peffley, *Gas Engr.* Edwin Snook, *Utilization Engr.* R. J. Gruver, *Gen. Foreman.* W. R. Edwards, *Foreman Meter Shop.* 234 miles, 2- to 16-inch.

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Central Gas Utilities Co., The, Abilene, Kans.

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Chicago District Pipe Line Co., Room 503, Joliet Bldg., 4-6-8 E. Clinton St., Joliet, Ill.

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Colorado-Wyoming Gas Co., 407 Continental Oil Bldg., Denver, Colo.

H. D. Hancock, *Pres.* C. J. Shortess, W. A. Jones, *V. P.s.* H. P. Davis, *Sec.* E. H. Johnston, *Treas.* W. L. Thackrey, *Gen. Supt.* W. J. Giddings, *Meas. Engr.* George C. Grill, Arvada, Colo., *Compressor Supt.* L. B. McGuire, Wellington, Colo., *Sta. Supt.* H. P. Davis, *Pur. Agt.* C. J. Shortess, *Gen. Mgr.* 195 miles, 1- to 10-inch.

Columbia Gas & Electric Corp., 61 Broadway, New York, N. Y., and principal active companies including Atlantic Seaboard Corp., Binghamton Gas Works, Bracken County Gas Co., Central Kentucky Natural Gas Co., Cincinnati Gas & Electric Co., Cincinnati Gas Transportation Co., Cincinnati, Newport & Covington Railway Co., Columbia Corp., Columbia Engineering Corp., Cumberland & Allegheny Gas Co., Dayton Power & Light Co., Eastern Pipe Line Co., Fayette County Gas Co., Gettysburg Gas Corp., Greensboro Gas Co., Hamilton Service Co., Harrison Electric & Water Co., Home Gas Co., Huntington Gas Co., Indiana Gas Distribution Corp., Keystone Gas Co., Inc., Love-

land Light & Water Co., Manufacturers Gas Co., Manufacturers Light & Heat Co., Miami Power Corp., Michigan Gas Transmission Corp., Natural Gas Co. of West Virginia, Northwestern Ohio Natural Gas Co., Ohio Fuel Gas Co., Pennsylvania Fuel Supply Co., Point Pleasant Natural Gas Co., Union Light, Heat & Power Co., United Fuel Gas Co., Warfield Natural Gas Co.

Philip G. Gossler, *Chm. Bd.* Walter C. Beckjord, *Chm. Exec. Comm., V. P.* and *Gen. Mgr.* Edward Reynolds, *Pres.* Thomas B. Gregory, *Hon. V. P.* Hubert C. Blackwell, Paul S. Clapp, Robert H. Delafield, Thomas R. Weymouth, W. Winans Freeman, Harry A. Wallace, Chauncey I. Weaver, *V. P.s.* Howland H. Pell, Jr., *Sec.* Andrew J. Newman, *Treas.* Jacob R. Harvin, David E. Mitchell, *Asst. Secs.* H. Edwin Olson, *Asst. Treas.* Francis B. Flahive, *Comptroller.* Operating Group Executives: Charles E. Pennett, Pittsburgh Group, *Pres.* Hubert C. Blackwell, Cincinnati Group, *Pres.* Oliver S. Hagerman, Seaboard Group, *Pres.* Chauncey I. Weaver, Columbus Group, *Pres.* Irving K. Peck, Binghamton Group, *Pres.* Frank M. Tait, Dayton Group, *Pres.* Harry A. Wallace, Charleston Group, *Pres.*

Columbia Natural Gas Co., The, 545 William Penn Way, Pittsburgh, Pa.

Since December 31, 1938, consolidated with the holdings of Peoples Natural Gas Co., 545 William Penn Way, Pittsburgh, Pa.

Commonwealth Gas & Electric Co., 89 Broad St., Boston, Mass.

William C. Bell, *Pres.* Harry Hanson, *Treas.* John F. Mack, *Sec.*

Consolidated Gas Utilities Corp., Hales Bldg., Oklahoma City, Okla.

E. C. Joullian, *V. P.* Norman Hirschfield, *V. P.* Robert LeRoy, *Sec.* J. W. Metcalfe, *Treas.* Conrad C. Mount, *Asst. Sec.* and *Gen. Counsel.* C. S. Worley, *Pur. Agt.* and *Engr. Comp. Sta.* J. W. Duvall, *Ind. Engr.* Richard W. Camp, *Engr. Geol.* C. B. Day, Blackwell, Okla., *Northern Div. Supt.* Paul S. Pierson, Lawton, Okla., *Southern Div. Supt.* W. C. Burris, Weatherford, Okla., *Western Div. Supt.* C. D. Reasor, Wichita, Kans., *Wichita Div. Supt.* J. B. Owens, Neodesha, Kans., *Neodesha Dist. Supt.* V. W. Hall, Winfield, Kans., *Winfield Div. Supt.* 1,431.64 miles, up to 14-inch.

Cut Bank Gas Utilities, Cut Bank, Mont.

Jerome L. Drumheller, *Sole Owner.* D. M. Drumheller, Jr., *Gen. Mgr.* 12.33 miles. 1- to 3-inch.

D

Del Rey Oil & Gas Co., Washington St. and Beach Ave., Venice, Calif.

J. A. Crawford, *Pres.* F. A. E. Lowell, *V. P.* H. A. Wohlenberg, *Asst. Sec.* A. E. Schiltz, *Sec.*

Dominion Natural Gas Co., Ltd., The, 518 Jackson Bldg., Buffalo, N. Y.

Henry L. Doherty, *Pres.* S. B. Severson, *V. P.* F. Fair, *Prod. Supt.* J. A. Richie, *Sec.* and *Treas.* George M. Merrill, *Ch. Engr.* Willis M. Hott, *Meas. Engr.* L. D. Burdick, St. Thomas, Ontario; F. D. Howell, Brantford, Ontario; C. H. Lutz, Dunnville, Ontario; C. F. Henderson, St. Catherines, Ontario, *Div. Supts.* 1,473.314 miles (on 3-inch basis), 1¼- to 12-inch.

E

East Ohio Gas Co., The, 1405 E. Sixth St., Cleveland, Ohio.

C. E. Gallagher, *Pres.* J. J. McMahon, *V. P.* W. G. Rogers, *Sec.* and *Treas.* W. G. Hagan, *Asst. Gen. Mgr.* G. W. Horsley, *Gen. Supt.* G. P. Binder, Cleveland plant, *Supt.* J. F. Gray, *Ch. Engr.* A. T. Code, *Pur. Agt.* 6,509.57 miles, ⅝- to 36-inch inclusive.

El Paso Natural Gas Co., 1010 Bassett Tower, El Paso, Tex.

Paul Kayser, *Pres.* C. C. Cragin, *V. P.* and *Gen. Mgr.* A. J. Forbes, Jr., *V. P.* and *Gen. Supt.* J. E. Franey, *Sec.* and *Treas.* A. C. Martch, *Asst. Sec.* and *Asst. Treas.* C. L. Perkins, *Supt. of Trans.* C. C. Selly, *Supt. of Bldg. Constr.* D. H. Tucker, *Supt. of Meas.* W. H. Miller, *Supt. of Compr. Stas* C. L. Moore, *Asst. Supt. of Compr. Stas.* J. F. Schaffer, *Constr. Pipe Line Supt.* H. F. Steen, Jal, N. M., *Field Supt.* J. F. Eichelmann, *Ch. Engr.* W. A. Mullane, *Engr.* J. M. Stricklin, *Ch. Dispatcher.* E. L. Woody, Comp. Sta. 1, Malaga, N. M.; J. A. Crutcher, Comp. Sta. 2, El Paso, Tex.; E. A. Scearce, Comp. Sta. 3, El Paso, Tex.; A. E. Carr, Comp. Sta. 4, Gage, N. M.; F. L. Anderson, Comp. Sta. 5, Douglas, Ariz.; E. L. Chapman, Comp. Sta. 6, Benson, Ariz., *Ch. Operators.* John M. Newberry, Malaga, N. M.; N. W. Meador, El Paso, Tex.; Paul C. Wright, El Paso, Tex.; L. A. Coussons, Gage, N. M.; L. M. Stricklin, Douglas, Ariz.; R. W. Walsh, Tucson, Ariz.; E. W. Woody, Casa Grande, Ariz., *Div. Foremen.* 1,073.52 miles, 2⅝- to 16-inch.

Empire Southern Gas Co., 608 Petroleum Bldg., Big Spring, Tex.

R. W. Rea, *Pres.* F. N. Coughlin, James A. Davis, *V. P.s.* J. G. McClellan, *Sec.* and *Treas.* J. P. Kenney, *Dist. Mgr.* F. Charles Landers, Jr., *Supt.* B. P. Ledbetter, *Engr.* C. L. Ponder, *Sta. Engr.* Ernst Tetens, Brady, Tex., *Dist. Mgr.* Lem Woods, *Supt.* Harold M. Mastin, Gormon, Tex.; Jasper Goodwill, Minden, La., *Mgrs.* R. W. Adams, *Supt.* C. C. Redding, Clarksville, Ark., *Mgr.* 152.35 miles, 2- to 8⅝-inch.

Equitable Gas Co., 435 Sixth Ave., Pittsburgh, Pa.

F. R. Phillips, *Pres.* F. F. Schauer, *V. P.* F. B. Saunders, *Gen. Auditor.* Joseph McKinley, *V. P. Chg. Sales.* W. B. Carson, *Sec.* C. J. Braun, Jr., *Treas.* D. P. Hartson, *Oper. Mgr.* H. H. Pigott, *Gen. Supt. Prod.* and *Trans.* J. H. Newlon, *Supt. of Prod.* and *Geologist.* Judson Bonsall, Clarksburg, W. Va., *Supt. Comp. Stas.* T. H. Kendall, *Gen. Supt. Distribution.* J. M. Shields, *Land Agt.* 2,562.45 miles, 1- to 36-inch.

F

Fidelity Gas Co., Aliquippa, Pa.

W. S. Kidd, Jr., *Pres.* W. A. Blis, *V. P.* and *Treas.*

Ford, Mrs. H. L., Barnes, Pa.

Mrs. H. L. Ford, *Owner.* 6 miles, 1¼- to 2-inch.

Fort Smith Gas Co., 23 N. Eighth St., Fort Smith, Ark.

A. B. Harper, *Pres.* S. R. Walker, *V. P.* David Flinn, *Sec.* and *Treas.* G. D. Groesbeck, *Supt. of Distribution.* 225 miles, 2- to 12-inch.

Frankfort Kentucky Natural Gas Co., Lexington, Ky.

D. L. Hazelrigg, *Pres.* Joseph E. Harting, *V. P.* T. J. Tonkin, Jr., *Sec.* and *Treas.*

Franklin, Ben., Refining Co., 1310 National Bank of Tulsa Bldg., Tulsa, Okla.

T. A. Anson, *Pres.* Ben P. Piepgrass, *Sec.* Benedict T. Luhell, *Treas.* Ollie Milliron, *Pipe Line Supt.* L. H. Mack, *Engr.* 23 miles, 4- and 6-inch.

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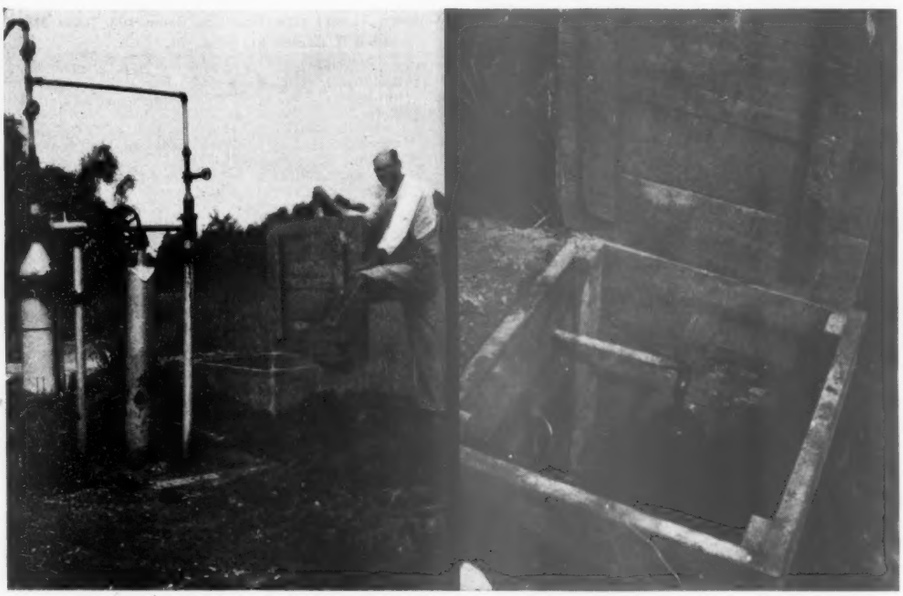

BULLETIN

Copies of this bulletin will be sent to any reader free on request. If you are interested in steam trap applications, ask for a copy of "The Armstrong Steam Trap Book."

RAIN or shine . . . through flood or snow . . . and even when the outdoor temperature is down to zero, the Kentucky Natural Gas Co. gets dependable and completely automatic discharge of gas line condensate with Armstrong traps. Above at the left is one of their gas wells with separator drained by a No. 2 Armstrong Gas Trap. The picture at the right shows how the trap is protected by a wooden box. With the lid down and dirt banked up around the edges, the trap gets along fine in cold weather. It discharges out to the ground a few feet away.

Armstrong traps are available in a complete range of sizes for this service. We will be glad to give you complete information on how they are being used and what advantages are secured. Ask for a copy of special bulletin. ARMSTRONG MACHINE WORKS, 868 Maple St., Three Rivers, Mich.

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Automatic Drainage for

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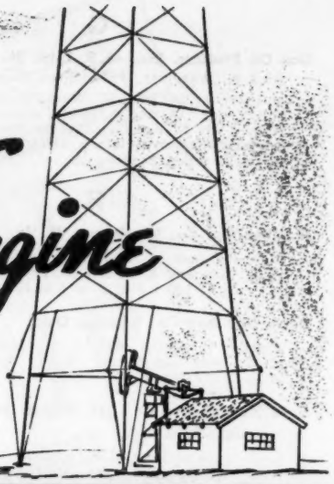

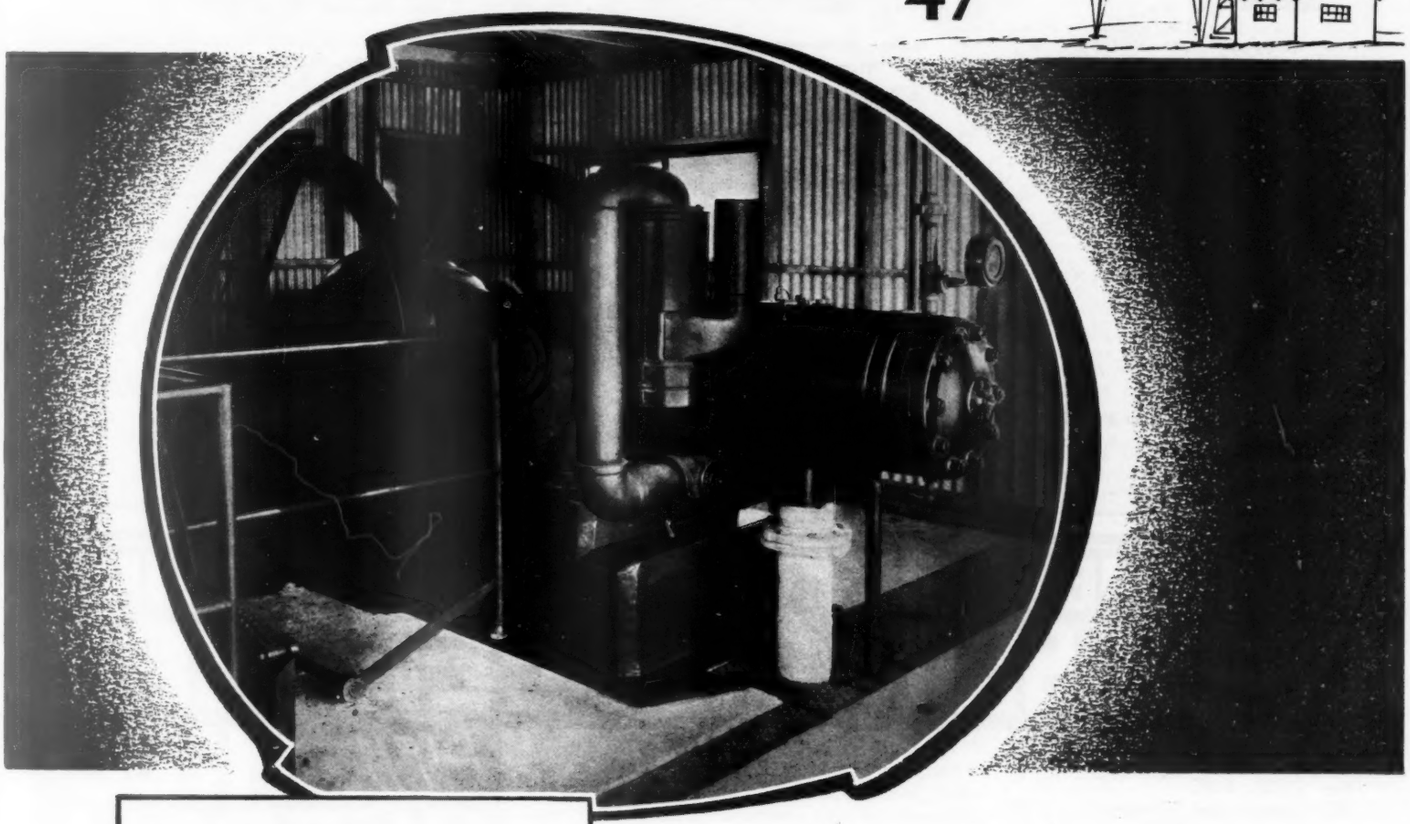

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WHETHER it's pulling rods or tubing . . . running a bailer . . . drilling deeper . . . or straight pumping—you can rely on the dependability of the Fairbanks-Morse Model 47 Pumping Engine. The simple, two-cycle, slow-speed design has long appealed to the practical man who appreciates fundamental simplicity with freedom from frequent repair bills.

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G

Gas Oil Products, Inc., 45 S. Third St., Oxford, Pa.

John H. Ware, Jr., *Pres.* John H. Ware, III, *V. P.* and *Treas.* Willard M. Ware, *V. P.* L. J. Ostermayer, *Sec.* Le Roy A. Baker, *Plant Supt.* Mark O. Haines, H. E. Kendall, Wester Wenrich, Earle A. Leonard, Preston Melbaum, John W. Heiney, *Branch Mgrs.* 32 miles, 2- to 4-inch.

H

Hamilton Gas Co., Charleston, W. Va.

Company now in receivership. L. A. Larner, *Pres.* B. A. Wise and A. F. McCue, *Trustees.* J. M. Dolan, *Gen. Supt.* 120 miles, 2- to 8-inch.

Home Pipe Line Co., Cushing, Okla.

Andrew W. Little, *Pres.* L. D. Gaunt, *V. P.* Harry Meizl, *Sec.* and *Treas.* H. T. Eagle, *Supt.* 5½ miles, 2- to 6-inch.

Hope Natural Gas Co., 545 William Penn Way, Pittsburgh, Pa.

L. L. Tonkin, *Pres.* J. C. Chisler, *V. P.* and *Treas.* S. E. W. Burnside, *Sec.* C. C. Reed, *Gen. Supt.* John A. Clark, *Asst. Supt.* J. J. Logue, *Div. Supt.* J. H. Mayfield, *Div. Supt.* L. G. Kincheloe, Charleston, W. Va., *Supt. Main Line Dept.* C. M. Fleming, Charleston, W. Va., *Div. Supt.* 4,939 miles, 2- to 20-inch.

Houston Gulf Gas Co., Rusk Bldg., Houston, Tex.

N. C. McGowen, Shreveport, La., *Pres.* R. H. Hargrove, M. A. Abernathy, H. W. Streat, New York, N. Y., *V. P.s.* S. L. Davis, *Comptroller.* W. H. Miracle, *Sec.* and *Asst. Treas.* A. L. McClellan, *Treas.* and *Asst. Sec.* George D. Fiser, *Asst. Sec.* and *Asst. Treas.* Bert H. Winham, Shreveport, La., *Asst. Sec.* R. E. Hull, *Gen. Auditor.* A. D. Greene, *Ch. Engr.* R. A. Reeder, *Pur. Agt.* E. R. Cunningham, *Gen. Supt. Main Pipe Line.* Ed Parkes, *Gen. Supt. Field Pipe Lines.* A. L. Bradford, *Gen. Supt. Comp. Sta.* Ray Rountree, *Meas. Supt.* W. F. Fulton, *Supt. Chem. Dept.* E. M. Smith, *Supt. T. and T.* and *Ch. Dispatcher.* W. H. Kearney, *Dist. Mgr.* 482 miles, up to 18-inch.

Houston Pipe Line Co., Petroleum Bldg., Houston, Tex.

George A. Hill, Jr., *Pres.* L. S. Zimmerman, *V. P.* and *Treas.* A. H. Kennerly, *Sec.* C. Lee Wood, *Gen. Mgr.* W. E. Smith, Dinero, Tex., *Comp. Sta. Supt.* Rex West, Beeville, Tex., *Field Supt.* H. D. Carmouche, *Dist. Supt.* C. J. Brown, *Supt. of Meas.* F. Y. Hutchinson, Walter H. Coster, Woodsboro, Tex.; G. P. Parker, Hebbronville, Tex.; Clarence Robbins, Dinero, Tex.; L. E. Wagstaff, Edna, Tex., *Ch. Engrs.* H. J. Worth, Woodsboro, Tex.; Jack Everman, Dinero, Tex.; H. C. Shaw, Hebbronville, Tex., *Field Foremen.* Jack Collerain, *Supt. of Tel. and Tel.* David Harrel, *Corrosion Engr.* J. W. Mayo, *Inspector.* R. D. Parker, Floyd Curtsinger, Freeport, Tex.; T. A. Chappell, Wharton, Tex.; Charles Anderson, Edna, Tex.; E. E. Trapp, Victoria, Tex.; P. J. Manning, Taft, Tex.; Eddie Rimmer, Bay City, Tex., *Dist. Foremen.* T. P. Ewing, *Ch. Dispatcher.* James L. Burke, *Lab. and Del. Sta. Inspector.* Robert L. Dabney, *Sales Mgr.* 624.74 miles, 6- to 18-inch.

I

Indiana Gas Distribution Corp., 99 N. Front St., Columbus, Ohio.

C. I. Weaver, *Pres.* E. M. Tharp, T. H. Kerr, W. L. McCloy, *V. P.s.* P. A. Alberty, *Sec.* E. D. Bivens, *Treas.* Paul G. Miller, Zionsville, Ind., *Dist. Mgr.* 48½ miles.

Indiana Southwestern Gas Corp., 423 La Plante Bldg., Vincennes, Ind.

R. D. Brown, *Pres.* R. E. Eckel, *V. P.* D. L. Rinehart, *Sec.* and *Treas.* H. F. Klopp, *Accountant.* R. H. Tomson, *Field Supt.* 150 miles, 2- to 6-inch.

Inland Gas Corp., Ashland, Ky.

Ben Williamson, Jr., *Trustee.* A. H. Grayburn, *Asst. Treas.* O. H. Horne, *Gen. Supt.* H. R. Stump, *Supt. Meas.* W. A. Horne, *Engr.* R. D. Soper, *Pur. Agt.* Mike Staley, *Field Supt.* V. O. Ward, *Comp. Sta. Supt.* 361.54 miles, 2- to 16-inch.

Interstate Natural Gas Co., Inc., 30 Rockefeller Plaza, New York, N. Y.

F. H. Lerch, Jr., *Pres.* W. A. Dougherty, *V. P.* E. E. Du Vall, *Sec.* James Comerford, *Treas.* John Gordon, Monroe, La., *Gen. Supt.* 334.72 miles.

Iowa-Nebraska Light & Power Co., Lincoln, Neb.

L. R. King, *Pres.* O. R. Mallatt, *Sec.* William M. Fenton, *Treas.* F. J. Gunther, H. Gildersleeve, *V. P.s.* R. L. Schacht, *Asst. Ch. Engr.* E. E. Miller, Ed Hennek, *Gas Supts.* J. L. White, *Engr.* 58 miles, 4- and 6-inch.

J

James City Gas Co., Kane, Pa.

William R. James, *Pres.* M. C. James, *V. P.* E. H. James, *Sec.* and *Treas.* 8 miles, 4-inch.

Jenks Natural Gas Co., Jenks, Okla.

El Blieden, *Trustee.* J. R. Johnston, *Mgr.* W. J. Corgan, *Supt.* 15.7 miles, 1- to 6-inch.

K

Kentucky Natural Gas Corp., 423 W. Third St., Owensboro, Ky.

J. H. Hillman, Jr., *Pres.* W. J. Hinchey, *V. P.* and *Gen. Mgr.* Charles A. Myer, *V. P.* and *Treas.* H. A. Sprowls, *V. P.* Robert W. Eiler, *Sec.* W. T. Stevenson, *Asst. Sec.* and *Treas.* H. C. Nunn, *Pipe Line Supt.* J. W. Polkinghorn, *Supt. of Land and Lease Dept.* H. C. McKinley, *Supt. of Oil Prod.* G. C. Staves, *Supt. Drlg.* J. L. Bugg, *Supt. Dist. Systems.* H. H. Walker, *Business Promotion.* H. F. Keith, *Pur. Agt.* C. E. Curry, *Supt. Comp. Stas.* D. C. Benson, *Supt. of Gas Meas.* A. L. Roberts, *Asst. Supt. Pipe Line.* 831 miles, 2- to 12-inch.

Kentucky-West Virginia Gas Co., 608 Second National Bank Bldg., Ashland, Ky.

F. R. Phillips, Pittsburgh, Pa., *Pres.* F. F. Schauer, T. B. Wilson, A. W. Lee, Jr., Louisville, Ky., *V. P.s.* P. C. Van Gilst, *V. P. Chg. Oper.* W. B. Carson, Pittsburgh, Pa., *Sec.* C. J. Braun, Jr., Pittsburgh, Pa., *Treas.* E. R. Clark, *Asst. Sec.* and *Asst. Treas.* William Ward, Prestonburg, Ky., *Supt. Prod.* C. V. Kishpaugh, Prestonburg, Ky., *Supt. Comp. Sta.* C. D. Hunter, *Geologist.* P. E. Dufendach, *Ch. Engr.* 524.89 miles, 2- to 16-inch.

Kevin Gas Distribution Co., Kevin, Mont.

J. H. Agen, *Pres.* F. H. McPhillips, *V. P.* and *Mgr.* M. J. Rader, *Sec.* and *Treas.* 5 miles, 2- and 4-inch.

L

Larner Gas Co., Charleston, W. Va.

Company now in receivership. W. A. Larner, *Pres.* B. A. Wise and A. F. McCue, *Trustees.* J. M. Dolan, *Gen. Supt.*

Le Flore County Gas & Electric Co., Poteau, Okla.

Charles T. Orr, *Pres.* and *Gen. Mgr.* Raymond F. Orr, *V. P.* C. B. Saviers, *Sec.* and *Treas.* James F.

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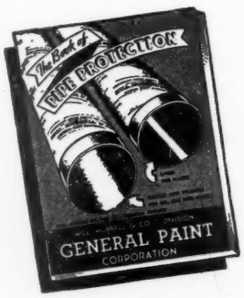

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Our gas supply is adequate—when your own fuel is exhausted, we stand ready to serve you with a product of your own industry. Use Natural Gas—the bigger the year-round market that can be developed for it, the nearer your own industry comes to solving its production problems especially in high ratio areas.

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Our lines parallel the highways—traverse farm and field. We can supply you the same efficient, dependable service enjoyed by large industrial plants in nearby cities. Natural Gas reduces need for new construction—requires no storage facilities—its cost is low, its profit potential high.

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OKLAHOMA NATURAL Gas Company

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M

Mars Co., The, 308 Seneca St., Oil City, Pa.

George E. Welker, *Pres.* A. C. Burwell, *V. P.* H. S. Rose, *Sec.* and *Treas.*

Mercer County Gas Co., 308 Seneca St., Oil City, Pa.

George E. Welker, *Pres.* W. H. Locke, *V. P.* H. S. Rose, *Sec.* and *Treas.* G. H. W. Sherman, *Asst. Sec.* M. J. Talley, *Asst. Sec.* and *Asst. Treas.* P. L. Mulkin, *Supt. of Distribution.* M. J. Connor, *Pur. Agt.*

Mississippi River Fuel Corp., 30 Rockefeller Plaza, New York, N. Y., and 407 N. Eighth St., St. Louis, Mo.

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Monongahela West Penn Public Service Co., Fairmont, W. Va.

A. C. Spurr, *Pres.* J. K. Buchanan, O. F. Lough, C. H. Leatham, *V. P.s.* G. J. Jackson, *Sec.* O. F. Lough *Treas.* G. W. Harr, *Mgr. Gas Dept.* G. H. Jackson, *Field Supt.* K. H. Bane, *Supt. Comp. Sta.* J. R. Henderson, *Supt. Distribution.* T. K. Heck, *Field Meterman.* J. W. Allison, Morgantown, W. Va., *Gen. Supt.* Russell Crawford, Morgantown, W. Va., *Field Supt.* 447.72 miles, 2- to 10-inch.

Montana-Dakota Utilities Co., 831 Second Ave., South Minneapolis, Minn.

C. C. Yawkey, Wausau, Wis., *Pres.* R. M. Heskett, *V. P.* Ben Alexander, Chicago, Ill., *V. P.* A. P. Woodson, Wausau, Wis., *Sec.* F. R. Gamble, *Treas.* Cecil W. Smith, *Ch. Engr.* H. M. Frederickson, *Gas Engr.* A. F. Anderson, *Pur. Agt.* James Trimble, Bismarck, N. D.; C. B. Aasness, Rapid City, S. D.; E. W. Browne, Sheridan, Wyo.; Robert Naylor, Miles City, Mont.; Noel Carrico, Glendive, Mont.; James Phillips, Glasgow, Mont.; F. S. Marion, Havre, Mont.; Harlan Scott, Great Falls, Mont.; V. M. Cleaveland, Williston, N. D., *Div. Mgrs.* H. A. Schroth, Baker Mont.; Clyde Keys, Shelby, Mont., *Gas Field Supts.* 1,084.8 miles, 2- to 12-inch.

Mountain Fuel Supply Co. (Utah), 539 S. Main St., Findlay, Ohio.

T. B. Gregory, Pittsburgh, Pa., *Chm. Bd.* and *Treas.* O. D. Donnell, *Pres.* L. B. Danning, Dallas, Tex.; J. M. Simpson, Pittsburgh, Pa.; J. C. Donnell, II, R. M. Redding, Dallas, Tex.; J. D. Roberts, Salt Lake City, Utah; C. L. Fleming, John McFadyen, Casper, Wyo.; C. R. Hetzler, Rock Springs, Wyo., *V. P.s.* F. B. Firmin, *Sec.* and *Asst. Treas.* 441.51 miles, 3- to 18-inch.

Mountain States Gas Co., Chicago, Ill.

D. D. Irwin, *Pres.* Henry Hauseman, *V. P.* C. H. Jay, *Sec.* and *Treas.* J. H. Botkin, *Comptroller.* J. A. Waggoner, Dawes, W. Va., *Gen. Mgr.* O. M. Lovell, Cabin Creek, W. Va., *Supt.* 37 miles, 2- to 6-inch.

N

Natural Gas Pipe Line Co. of America, 20 N. Wacker Drive, Chicago, Ill.

W. A. Jones, *Pres.* Floyd C. Brown, *V. P.* and *Gen. Mgr.* W. A. Daugherty, R. Ogarrio, *V. P.s.* S. E. Campbell, *Sec.* E. H. Johnston, *Treas.* E. V. Kesinger, *Gen. Supt.* G. M. Davidson, *Ch. Engr.* and *Supt. of Oper.* R. G. Strong, *Pipe Line Supt.* W. H. Davidson, *Supt. of Compr. Sta.* W. T. Bulla, *Supt. of Tel.* and *Pressure.* M. C. Madsen, *Supt. of Constr.* Earl Rush, Joliet, Ill., *Meter Supt.* D. C. Palm, Geneseo, Ill.; L. S. Duddleston, Truro, Iowa; M. J. Cook, Beatrice, Neb.; M. V. Burlingame, Heizer, Kans., *Pipe Line Dist. Supts.* E. D. Warren, Harper, Iowa; H. E. Smith, Heizer, Kans., *Pipe Line Div. Supts.* W. E. Warner, Sta. No. 2, Gray, Okla.; J. M. Daugherty, Sta. No. 3, Bloom, Kans.; C. C. Jolley, Sta. No. 4, Heizer, Kans.; H. C. Taintor, Sta. No. 5, Glasco, Kans.; E. C. Marsh, Sta. No. 6, Beatrice, Neb.; D. B. Sprow, Sta. No. 8, Hastings, Iowa; F. F. Graham, Sta. No. 8, Truro, Iowa; H. R. Rohwedder, Sta. No. 9, Harper, Iowa; R. M. Hendry, Sta. No. 10, Geneseo, Ill., *Sta. Supts.* 841.4 miles, 2- to 24-inch.

New Mexico Eastern Gas Co., Burt Bldg., Dallas, Tex.

Albert Johnson, *Pres.* C. H. Zachry, *V. P.* and *Treas.* F. W. Smith, J. R. Cole, Ross Byron, *V. P.s.* H. V. McConkey, *Sec.* J. R. Cole, Santa Fe, N. M., *Oper. Mgr.* H. N. Oldham, Carlsbad, N. M.; E. M. Kelly, Covis, N. M., *Dist. Mgrs.* J. C. Reid, Dallas, Tex., *Engr.* Van Thompson, Dallas, Tex., *Asst. Engr.* F. D. Bradley, *Pur. Agt.* 375 miles, 1- to 8-inch.

New Mexico Gas Co., 1104 Burt Bldg., Dallas, Tex.

Albert S. Johnson, *Pres.* C. H. Zachry, F. W. Smith, Ross Byron, J. R. Cole, *V. P.s.* H. V. McConkey, *Sec.* C. H. Zachry, *Treas.* James C. Reid, *Supt.* Van Thompson, *Supt. of Measurement.* E. H. Newman, *Engr.* At Santa Fe, N. M.: J. H. Wilson, *Dist. Mgr.* J. C. Byrd, *Town Plant Mgr.* O. B. Peacore, *Main Line Supt.* H. Beauchamp, *Sales Mgr.* 266 miles, 2- to 12-inch.

New York State Natural Gas Corp., 545 William Penn Way, Pittsburgh, Pa.

J. French Robinson, *Pres.* J. C. Trees, F. H. Lerch, Jr., *V. P.s.* E. E. Duvall, *Sec.* S. J. Ratcliffe, *Asst. Treas.* John J. Jacob, Jr., *Ex. Asst. to Pres.* J. M. Chilcote, *Supt.* F. A. Benkert, *Pur. Agt.* 254.81 miles, up to 20-inch.

North East Heat & Light Co., 16 N. Lake St., North East, Pa.

Stephen T. Lockwood, *Pres.* C. O. Zimmerman, *Sec.* Robert I. Thompson, *Treas.* and *Supervising Mgr.* John G. Watt, *Local Supt.* 19.3 miles, 1- to 8-inch.

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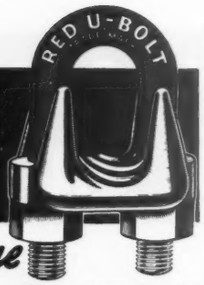

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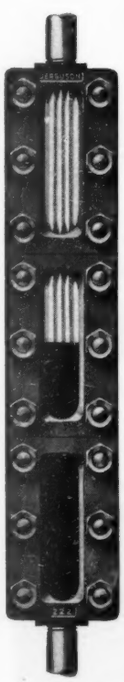

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Northwestern Ohio Natural Gas Co., 99 N. Front St., Columbus, Ohio.

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O

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R. B. MacDonald, *Pres.* L. H. Heinke, R. F. Henneman, H. B. Munsell, *V. P.s.* L. H. Heinke, *Sec.* C. P. Van Dyke, E. L. Fischer, United Light & Power Service Co., Davenport, Iowa, *Engr.* A. E. Shoemaker. *Service Supt.* C. S. Davis. *Dist. Supt.* R. F. Henneman, *Gen. Mgr.* A. R. Seaburg, *Ch. Clerk.* 97 miles, 1- to 16-inch.

P

Pacific Gas & Electric Co., 245 Market St., San Francisco, Calif.

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Public Service Corp. of Texas, 610 Mid-Continent Bldg., Fort Worth, Tex.

William Horwitz, *Pres.* Thomas Cook, S. B. Horwitz, *V. P.s.* I. E. Horwitz, *Sec.* and *Gen. Mgr.* M. A. Berman, *Treas.* H. J. Boisdorf, *Supt.* at Perrytown, Tex. 248 miles, 2- to 6-inch.

R

Reidsburg Natural Gas Co., Clarion, Pa.

C. E. Deltz, *Pres.* E. E. Deltz, *Sec.* and *Treas.* 2 miles, 2-inch.

Republic Light, Heat & Power Co., Inc., 518 Jackson Bldg., Buffalo, N. Y.

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Revere Natural Gas Co., Jefferson, Pa.

C. R. Sellers, *Pres.* J. R. Scott, *V. P.* Harry A. Cree, *Sec.* and *Treas.*

Ridgway Natural Gas Co., 308 Seneca St., Oil City, Pa.

George E. Welker, *Pres.* W. H. Locke, *V. P.* H S. Rose, *Sec.* and *Treas.* J. C. Montgomery, *Supt.*

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River Gas Co., The, 324 Fourth St., Marietta, Ohio.

H. B. Schum, *Pres.* S. E. W. Burnside, *Sec.* J. C. Chisler, *Treas.* 256 miles, 2- to 8-inch.

River Valley Gas Co., Paris, Ky.

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Rocky Mountain Gas Co., Casper, Wyo.

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Russelton-Curtisville Gas Utilities, 542 N. Elm St., Butler, Pa.

Allison L. Heile, *Pres.* Elmer E. Rieger, *Sec.* and *Treas.* 5½ miles, 2-inch.

S

Santa Maria Gas Co., 203 W. Main St., Santa Maria, Calif.

R. E. Easton, *Pres.* and *Treas.* F. S. Wade, R. W. Miller, *V. P.s.* L. P. Scaroni, *Sec.* R. E. Easton, *Gen. Mgr.* A. T. Fesler, *Gen. Supt.* C. W. Hatch, *Gen. Auditor, Asst. Sec.* and *Pur. Agt.* R. B. Bruce, *Asst. Gen. Supt.* and *Gas Engr.* I. S. Keyser, *Mgr. Utilization Dept.* Edward Marquart, Lompoc, Calif.; P. Hawkins, Pismo Beach, Calif.; C. W. Charles, San Luis Obispo, Calif.; P. M. Graham. Paso Robles, Calif., *Local Mgrs.* 361.25 miles.

Sergeant Gas Co., Williamsport, Pa.

Eben Russ, *Pres.* W. L. Heim, J. H. Bubb, *V. P.s.* W. L. Heim, *Sec.* N. B. Bubb, Jr., *Asst. Treas.* W. L. Heim, *Gen. Supt.* J. H. Heim, *Asst. Supt.* George Schrade, *Foreman.* 18 miles, 3- to 4-inch.

Smethport Natural Gas Co., 308 Seneca St., Oil City, Pa.

George E. Welker, *Pres.* W. H. Locke. *V. P.* H. S. Rose, *Sec.* and *Treas.* J. G. Montgomery, *Supt.*

Southern California Gas Co., 810 S. Flower St., Los Angeles, Calif.

A. B. Macbeth, *Pres.* William Moeller, Jr., *V. P. in Chg. Natural Gas Prod.* and *Trans.* F. E. Seaver, *Sec.* L. D. Romig. *Treas.* H. P. George, *Gen. Supt.* B. M. Laulhere, *Tech. Supervisor.* John Farmer, Avenal, Calif.; A. B. Newby, Taft, Calif.; S. S. Donaldson, Newhall, Calif., *Div. Mgrs.* Grove Lawrence,

(Continued on Page 94)

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Note the construction of Grizzly Powerflex Rotary Hose as shown in the illustration. It is this *exclusive* method of fabrication, the result of more than 20 years of experience, that gives Grizzly its superior strength and flexibility—a combination essential to long, trouble-free service.

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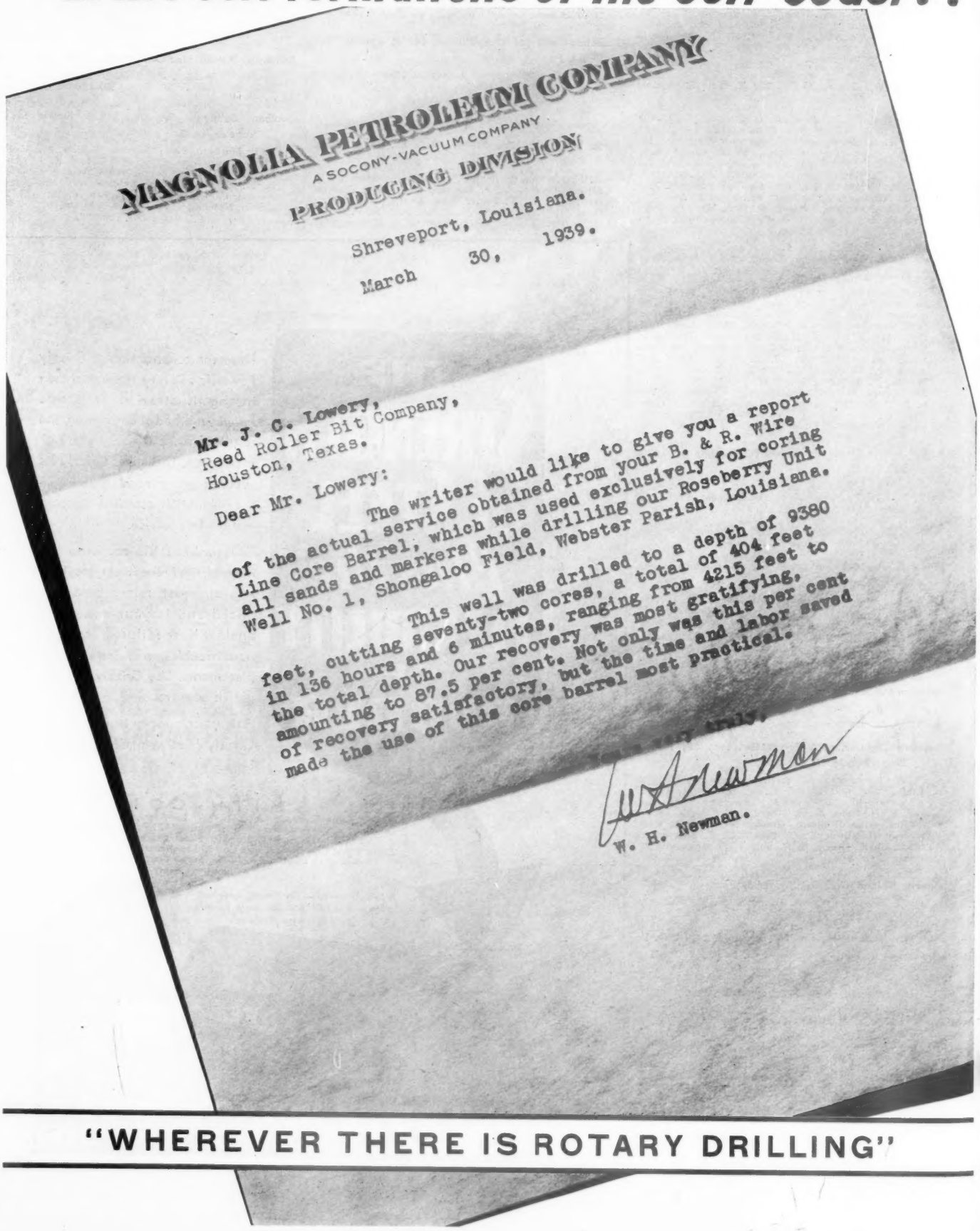

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Dear Mr. Lowery:

The writer would like to give you a report of the actual service obtained from your B. & R. Wire Line Core Barrel, which was used exclusively for coring all sands and markers while drilling our Roseberry Unit Well No. 1, Shongaloo Field, Webster Parish, Louisiana.

This well was drilled to a depth of 9380 feet, cutting seventy-two cores, a total of 404 feet in 136 hours and 6 minutes, ranging from 4215 feet to the total depth. Our recovery was most gratifying, amounting to 87.5 per cent. Not only was this per cent of recovery satisfactory, but the time and labor saved made the use of this core barrel most practical.

[illegible] trials.

W. H. Newman.

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Wire Line
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Southwestern Light & Power Co., Box 1470, Tulsa, Okla.

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R. B. Crawford, *Pres.* F. S. Pratt, *V. P.* Ray K. Osborn, *Sec.* and *Treas.* Earl J. Newlin, *Asst. Sec.* and *Asst. Treas.* G. R. Carpenter, *Gen. Supt.* Earl Fox, *Engr.* R. R. Smith, Wewoka, Okla., *Div. Mgr.* C. L. Boone, Anadarko, Okla., *Div. Mgr.* R. B. Graves, Laverne, Okla., *Div. Mgr.* 315 miles, 2- to 8-inch.

State Line Gas Co., Fairmont, W. Va.

A. C. Spurr, *Pres.* C. H. Leatham, J. K. Buchanan, *V. P.s.* O. F. Lough, *V. P.* and *Treas.* G. J. Jackson, *Sec.* G. W. Harr, *Mgr. Gas Dept.* G. H. Jackson, *Field Supt.* K. H. Bane, *Supt. Comp. Stas.* J. R. Henderson, *Supt. Distribution.* T. K. Heck, *Field Meterman.* J. W. Allison, Morgantown, W. Va., *Gen. Supt.* Russell Crawford, Morgantown, W. Va., *Field Supt.* B. W. Cordray, Point Marion, Pa., *Local Representative.* 32.36 miles, 2- to 8-inch.

Susquehanna Gas Co., Ninth and Hamilton Sts., Allentown, Pa.

J. S. Wise, Jr., *Pres.* L. W. Heath, *V. P.* C. M. Walter, *Sec.* and *Treas.* 82.7 miles, 3- to 14-inch.

T

Texoma Natural Gas Co., 20 N. Wacker Drive, Chicago, Ill.

W. A. Jones, *Pres.* Floyd C. Brown, *V. P.* and *Gen. Mgr.* R. Ogarrio, *V. P.* S. E. Campbell, *Sec.* E. H. Johnston, *Treas.* E. V. Kesinger, *Gen. Supt.* G. M. Davidson, *Ch. Engr.* and *Supt. of Oper.* R. G. Strong, *Supt. of Pipe Lines.* W. H. Davidson, *Supt. of Comp. Sta.* W. T. Bulla, *Supt. of Tel. and Pressure.* M. C. Madsen, *Supt. of Constr.* R. T. Powers, Fritch, Tex., *Supt. Sta. 1.* J. G. Barnhart, Fritch, Tex., *Asst. Supt. Sta. 1.* L. D. Williams, Fritch, Tex., *Pipe Line Div. Supt.* C. D. Richardson, Fritch, Tex., *Pipe Line Dist. Supt.* C. L. Mouch, Fritch, Tex., *Meter Supt.* 235 miles, 4- to 24-inch.

Thompson Gas Co., Charleston, W. Va.

Company now in receivership. W. A. Larner, *Pres.* B. A. Wise and A. F. McCue, *Trustees.* J. M. Dolan, *Gen. Supt.*

Tide Water Associated Oil Co., Associated Division, 79 New Montgomery St., San Francisco, Calif.

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Triangle Co., Inc., Pine Hollow Road, McKees Rocks, Pa.

J. B. Montgomery, *Pres.* John H. Montgomery, *Sec.* S. H. Morgan, *Treas.* A. A. Bock, *Supt.* and *Engr.*

Turner Gas & Oil Co., Bruin, Pa.

P. G. Turner, *Gen. Mgr.* 20 miles, 2-inch.

Twin City Pipe Line Co., 23 N. Eighth, Fort Smith, Ark.

A. B. Harper, *Pres.* J. C. Blair, *V. P.* R. A. DeLong, *Sec.* and *Treas.* S. R. Walker, *Asst. to Pres.* John Henson, *Supt.* 90 miles, 2- to 10-inch.

U

United Carbon Co., Union Bldg., Charleston, W. Va.

Oscar Nelson, *Pres.* and *Gen. Mgr.* G. A. Williams, T. F. Koblegard, T. S. Reed, *V. P.s.* C. H. McHenry, *Sec.* T. A. Whelan, *Treas.* Arthur Hanson, *Asst. Sec.* and *Controller.* C. A. Urban, *Asst. Treas.* and *Pur. Agt.* C. L. Staats, *Gen. Supt. Land Dept.* R. J. Clarkson, *Gen. Supt. Gas Dept.* R. W. Sleeth, *Agt. Land and Gas.* H. W. Engstrom, Monroe, La., *Gen. Supt. La.* and *Kans.* W. F. Seeger, Borger, Tex., *Gen. Supt. Tex.* C. K. Springfield, Sayre, Okla., *Gen. Supt. Okla.* Darius Morris, Clendenin, W. Va.; E. F. Hagans, Pikeville, Ky.; H. E. Norrick, Monroe, La.; S. I. Bennett, Satanta, Kans., *Supts.* L. G. Clements, Monroe, La., *Asst. Supt. La.* S. O. Reeder, Borger, Tex., *Asst. Gen. Supt. Tex.* E. W. Fitzwaters, Clendenin, W. Va.; Clyde Burkholder, Monroe, La.; C. R. Payne, Pikeville, Ky., *Metermen.*

Union Gas System, Inc., Independence, Kans.

Paul R. Johnson, *Pres.* Donald W. Stewart, Stanley G. Stewart, Kansas City, Mo., *V. P.s.* Donald W. Stewart, *Sec.* Harry F. Mitchell, *Treas.* W. L. Orr, *Asst. Treas.* and *Pur. Agt.* Vernon F. Palmer, *Mgr. Main Line Dept.* Frederick L. Rupp, *Mgr. Town Plant Dept.* and *Ch. Engr.* Charles W. Studt, *Mgr. Prod. Dept.* and *Ch. Geol.* Livingston J. Love, *Gen. Supt. Constr. and Oper. Main Lines.* Porter Graves, Coffeyville, Kans.; E. E. White, Independence, Kans.; Charles A. Lloyd, Caney, Kans.; C. C. Carson, Longton, Kans.; Clyde Myers, Fredonia, Kans.; Harry L. Ferrell, Olathe, Kans., *Dist. Supts.* 818 miles,, 3- to 12-inch.

United Gas Pipe Line Co., Rusk Bldg., Houston, Tex.

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United Natural Gas Co., 308 Seneca St., Oil City, Pa.

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Upham Gas Co., Mount Vernon, Ohio.

James A. Upham, *Pres.* C. F. Bauman, *Sec.* C. D. Jones, *Gen. Supt.*

W

Wagoner Gas Co., Wagoner, Okla.

J. R. Johnston, Wagoner, Okla., *Mgr.* J. J. Cobb, Wagoner, Okla., *Supt.* 24 miles, 2- to 8-inch.

Weleetka Pipe Line Co., Sand Springs, Okla.

R. W. McClure, *Pres.* D. V. Sullivan, *V. P.* T. S. Matthews, *Sec.* C. F. Colvin, *Treas.* D. V. Sullivan, *Gen. Supt.* 20.03 miles, 2- to 12-inch.

West Texas Gas Co., P. O. Box 1121, Lubbock, Tex.

A. R. Jones, Kansas City, Mo., *Pres.* P. C. Spencer, New York, N. Y.; E. A. Siekels, Tulsa, Okla.; M. D. Snyder, Amarillo, Tex.; R. F. Hinchey, Lubbock, Tex., *V. P.s.* George Baird, New York, N. Y., *Sec.* and *Treas.* R. F. Hinchey, *V. P.* and *Gen. Mgr.* J. L. Ryan, *Supt. City Plants.* E. C. Wagner, Amarillo, Tex., *Gen. Supt. Pipe Lines.* E. A. Dudley, *Asst. Gen. Supt. Pipe Lines.* R. M. Curry, *Resident Engr.* C. I. Wall, *New Business Mgr.* T. J. Sutherland, *Supt. Main Lines.* E. D. Parker, *Pur. Agt.* M. J. Aderton, *Resident Utilization Engr.* J. S. LeGate, Amarillo, Tex., *Supt. Gaso. Plant.* E. B. Mitchell, Plainview, Tex., *Comp. Sta. Supt.* 1,461 miles, 1¼- to 16-inch.

Wheeler Gas Co., Wheeler, Tex.

H. M. Wiley, *Owner* and *Mgr.* 437 meters.

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Map of Gas Fields & Pipe Lines of United States & Canada

Size, 52″ x 39″; scale, 55 miles—1″
Pipe lines and fields in red

Names of owners and sizes written along the lines.

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Specialists in Oil and Gas Maps since 1925.

This map has just been compiled under the direction of O. W. Wells, identified with oil companies for the past 25 years and a member of the American Gas Association.

ALWAYS RENEW YOUR SUBSCRIPTION PROMPTLY

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—An old Cleveland County wildcat, once abandoned as dry in Wilcox sand, is showing as commercial oil well after reconditioning. Second well in the Oswalt area, Love County, drilled into salt water at 6,888 feet, and was plugged back to test upper levels. A second Wilcox sand discovery in the Brown area, Garfield County, was completed.

KANSAS—Basal sand production was found in the Prusa pool, Barton County. The Laton pool, Rooks County, was extended three-fourths mile northward. Wildcats were started in Gray, Barton, Rice, Cowley and Butler counties.

MISSOURI—A wildcat being drilled near Liberty, Clay County, reported a "good showing of oil" in Mississippi lime at 915-19 feet, and was running casing. This resulted in a revival of lease buying at increased prces in an area that already had been closely leased.

ILLINOIS—The fields of this state crowded closely to the 200,000-bbl. mark in daily average production last week. Eighty-two new operations were started. The Salem field produced a little over 100,000 bbls. a day.

MICHIGAN—An acid treatment given to a 1,000-bbl. natural well in the Walker Wyoming field in Kent County increased its production to 3,100 bbls. a day. A 1,500-bbl. well in the Columbia pool in Van Buren County was a feature. Eleven new wells are listed for drilling in the Columbia area.

TEXAS: Gulf Coast—The Aldine area, north of Houston, was being added to the list of Harris County fields. West Ranch field, in Jackson County, is being given a quarter-mile extension. In the Louisiana side of the Gulf Coast a new pool was opened by a 500-bbl. well in the Grand Lake area in Cameron Parish. The first dry hole in the recently opened Eola field in Avoyelles Parish is recorded in Section 8-2s-3e, defining the pool on the southeast.

North Texas—The Bridwell discovery well north of Halsell, in Clay County, gauged 158½ bbls. in three hours, and this, and the recently opened Browning pool, have made Clay County the scene of a big leasing and wildcatting campaign, with Strawn sand production as the objective.

Eastern Texas—Henderson, Falls, Kaufman and Trinity counties have wildcats starting.

Southwest Texas—The fourth new field in Jim Wells County in two weeks was opened on the Springfield townsite, and another pool is in prospect in the county.

West Texas—The Ordovician discovery well in Pecos County looks good for 40 bbls. an hour. The Keystone pool in Winkler County and the North Cowden pool in Ector County were given substantial extensions.

West Central Texas—An eastern extension was given the Griffin pool in Jones County. A wildcat deep test has been staked in southeastern Throckmorton County.

COLORADO—Showings of oil above the objective sands in wildcats in Moffat and Park counties are considered important.

KENTUCKY—The first McClosky lime pool in Daviess County east of Owensboro seems assured. It is 15 miles from Cane River, the nearest McClosky field.

Completions in All Fields

(Week Ending May 6, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	21	15	3	39	1,044	1,542
Ohio	3	10	9	22	306	315
Indiana	0	0	0	0	41	26
Kentucky	3	0	2	5	193	258
Illinois	40	0	6	46	1,107	311
Michigan	15	0	16	31	401	271
Kansas	18	2	4	24	371	618
Oklahoma	24	2	9	35	608	593
Texas:						
North Central Texas	29	0	17	46	777	1,036
West Texas	36	0	1	37	647	815
Texas Panhandle	7	1	0	8	133	221
East Texas	5	0	0	5	193	831
East Central Texas	2	2	3	7	87	129
East Texas Border	1	1	0	2	24	60
Gulf Coast Texas	20	1	3	24	463	431
Southwest Texas	35	2	25	62	828	760
Total Texas	135	7	49	191	3,152	4,283
North Louisiana	5	3	0	8	180	200
Gulf Coast Louisiana	6	0	3	9	193	164
Total Louisiana	11	3	3	17	373	364
Arkansas	2	0	0	2	83	85
Montana	3	1	0	4	46	22
Wyoming	0	0	1	1	31	57
Colorado	0	0	0	0	3	-3
New Mexico	10	0	1	11	205	208
Utah	0	0	0	0	0	0
California	16	0	4	20	329	471
Total United States	301	40	107	448	8,293	9,427
Total previous week	322	31	114	467		
Week ending May 7, 1938	389	33	99	521		

Outstanding Fields—Highlights

(Week Ending May 6, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	15	37	5	2,780	984	23,648
Wasson-Bennett	20	32	6	4,264	283	13,469
Ector County	9	48	10	9,211	1,678	46,548
Winkler County	0	12	3	5,099	1,794	38,096
Howard-Glasscock	3	16	4	3,572	1,064	16,696
East Texas	14	25	5	185	26,060	447,000
OKLAHOMA						
St. Louis	4	17	6	1,641	815	38,750
Sac and Fox	4	10	2	346	346	3,600
KANSAS						
Barton County	6	17	1	151	424	14,010
Stafford County	3	8	2	987	260	7,605
Rice County	5	24	4	808	1,302	33,115
Russell County	4	23	6	3,443	1,225	16,915
NEW MEXICO						
Lea County	6	73	9	1,486	2,103	106,970
LA-ARK-TEX						
Shreveport, La.	1	11	1	790	31	5,850
Cotton Valley, La. (deep)	1	6	0	0	125	12,940
Jennings, La.	0	4	1	423	139	26,586
MICHIGAN						
Freeman-Redding	5	28	1	500	77	13,448
Van Buren County	7	37	11	3,880	206	14,852
ILLINOIS						
Central Illinois	44	330	40	6,903	2,944	190,620
CALIFORNIA						
Wilmington	4	20	3	1,472	620	88,250
KENTUCKY						
Birk City	2	10	0	0	124	1,940

Illinois and Kentucky

By STAFF CORRESPONDENT

82 New Operations Started in Illinois; 15 New Wildcats

MATTOON, Ill., May 8.—Eighty-two new operations in Illinois were reported in the past week, ranging all the way from locations to wells actually drilling. Only 46 wells were completed during the same period, of which 40 were oil wells with a combined initial production of 6,903 bbls. There were six dry holes and no gas wells.

With the new operations report comparing somewhat favorably to the same reports made late last fall before bad weather began to slow up exploration and development work, it may be assumed that Illinois operators have begun where they were obliged to leave off four months ago, and that the remainder of the year will see the Illinois fields a hive of industry. Fourteen wildcat operations were started in nine counties in the past week including Clark, Cumberland, Effingham, Washington, Wayne, Jefferson, St. Clair, Saline and Gallatin, while outpost tests in Marion and Fayette were also listed by operators in the Salem and Louden fields.

A summary of the completed work in the past week in review shows Fayette County had 15 new oil wells with an initial production of 3,224 bbls., and 2 dry holes; Clay County, 2 oil wells, 212 bbls.; Clark County, 1 oil well, 10 bbls.; Hancock County, 1 oil well, 3 bbls.; Richland County, 2 oil wells, 207 bbls., and 1 dry hole; Marion County, 13 oil wells, 2,418 bbls., and 2 dry holes; Jefferson County, 2 dry holes; Washington County, 3 oil wells, 599 bbls., and Wayne County, 3 oil wells, 230 bbls.

John Pugh, president of the Independent Oil Producers of Illinois, and one of the pioneer independent operators in the Centralia field, declares that over $1,000,000 was lost to producers and royalty owners in the first three months of this year through sales of under-priced oil by producers to brokers and refiners.

"Analysis of the gross pipe line runs for this period," Mr. Pugh said, "shows that out of a total of approximately 13,000,000 bbls. of Illinois oil marketed, more than 2,070,500 bbls. were sold below the market price of $1.15—some as low as 45 cents a barrel. It is safe to estimate that it will amount to more than a million dollars."

Mr. Pugh asserted that the sale of oil under the posted price was one of the reasons why his association was sponsoring a program for "necessary and reasonable state regulation of Illinois' oil production which will require all purchasers to buy equally from all wells and pools, eliminating the cut-rate purchaser as well as pipe line control of oil purchases."

The Socony-Vacuum Oil Co.'s 10-inch pipe line constructed this spring and summer from East St. Louis, to Lima, Ohio, contracts for which have been let, is expected to be completed in August. It will do away with a lot of the hot oil sales that have been made during the period of insufficient pipe line facilities, as it will be able to handle 40,000 bbls. of oil per day, which will relieve the pipe line situation materially.

Completed Wells

Following are listed the completions of the week, the initial production representing 24 hours, unless otherwise stated:

In Fayette County, Carter Oil Co. No. 1 Kate Owen, NE SE SW Section 29-8n-3e, Bethel sand at 1,550-64 feet, shot with 20 quarts. Casing perforated opposite Stray sand at 1,508-40 feet, swabbed 180 bbls. in 24 hours.

Whisenant and others No. 13 Smith, NE SW NE Section 30-7n-3e, dry and abandoned, depth not ascertained.

Carter Oil Co. No. 4 Taylor, NW NW SW Section 34-8n-3e, Weiler sand at 1,487-1,522 feet, and Stray at 1,572-78 feet, both sands shot, swabbed 151 bbls. Carter No. 2 Mills, NW SW SW Section 28-8n-3e, Bethel sand at 1,509-30 feet, shot with 40 quarts, flowed 492 bbls. Carter No. 1 Eagleton, SE SE SW Section 20-8n-3e, Stray sand at 1,581-89 feet, shot with 15 quarts, pumped 126 bbls. Carter No. 2 Lilly, NW NE SW Section 16-8n-3e, Stray sand at 1,583-90 feet, shot with 20 quarts, swabbed 29 bbls. Jarvis Brothers No. 1 Welker, NE cor. NW SE NW Section 31-7n-3e, sand at 390-450 feet, salt water disposal well. Jarvis Brothers No. 5 Welker, NW cor. SW SE NW Section 31-7n-3e, Weiler sand at 1,557-75 feet, total depth 1,584 feet, shot with 10 quarts, pumped 290 bbls. Whisenant and others No. 12 Smith, NW NW NE Section 30-7n-3e, Weiler sand at 1,559-76 feet, shot with 10 quarts, pumped 110 bbls. Carter Oil Co. No. 5 Feezel, SW SE NW Section 29-7n-3e, Cypress sand at 1,513-50 feet, shot with 50 quarts, swabbed 258 bbls. Carter Oil Co. No. 5 Welker, NE SE NW Section 8-7n-3e, Weiler sand at 1,414-64 feet and Stray sand at 1,495-1,503 feet, both sands shot and Stray sand acidized with 1,500 gallons, swabbed 141 bbls. W. C. McBride, Inc., No. 3 Saff, NW NW SW Section 18-7n-3e, Cypress sand at 1,520-54 feet, shot with 40 quarts, pumped 165 bbls. McBride No. 2 Saff, SE NW SW Section 18-7n-3e, Cypress sand at 1,530-56 feet, shot with 40 quarts, pumped 215 bbls. Carter Oil Co. No. 2 Welker, NW SW SE Section 7-7n-3e, shot with 20 quarts twice at 1,508-14 feet, swabbed 206 bbls. Carter Oil Co. No. 4 Quade, NW NE SW Section 6-7n-3e, Cypress sand at 1,419-75 feet, shot with 100 quarts, swabbed 344 bbls. Carter No. 5 Kistler, NE NW SW Section 6-7n-3e, Weiler sand at 1,475-1,523 feet, shot with 40 quarts, swabbed 217 bbls. Stewart Oil Co. No. 5 Durbin, SE NE SE Section 20-7n-3e, water at 1,653-58 feet and abandoned at 1,674 feet.

In the St. James pool in Fayette County, Rosenthal and others No. 9 Washburn, SE SW NW Section 30-6n-3e, Weiler sand at 1,597-1,612 feet, pumped 240 bbls. a day without a shot.

In Clay County, Richard Duncan No. 1 Liggett, SE NW SE Section 17-5n-5e, was completed in Aux Vases sand at 2,356-73 feet. It pumped 42 bbls. of oil and 7 bbls. of water. Pure Oil Co. No. 2 Mosely A, C W half NW NW Section 10-2n-8e, Fredonia lime top at 2,956 feet, pays and showings 2,970 to 3,040 feet, acidized with 5,000 gallons, flowed 170 bbls.

In Clark County, Phillips & Kost No. 1 Shuey, NW SE SE Section 31-12n-14w of second principal meridian, pay at 460-505 feet, 10-bbl. pumper.

In Hancock County, in western Illinois, Grady and others No. 1 Roberts, CSL NE SW Section 24-4n-5w of the fourth principal meridian, was shot with 20 quarts at 370-82 feet. It pumped 3 bbls. of oil and 100 bbls. of water.

In Richland County, Pure Oil Co. No. 1 Southgate, SE SW NE Section 23-4n-9e, Weiler sands at 2,576-2,600 feet and 2630-34 feet, pumped 81 bbls. John Mabee Drilling Co. No. 3 Sparr, SW NE SE Section 23-4n-9e, Weiler sand at 2,575-90 feet, shot with 40 quarts, second Weiler at 2,616-18 feet, pumped 126 bbls. Kingwood Oil Co. No. 1 Prine, SE SE SW Section 3-2n-14w, Fredonia lime at 3,070 feet, total depth 3,175 feet, dry and abandoned.

Illinois Fields

HIGHLIGHTS OF THE WEEK: The Salem pool in Marion County just passed the 100,000-bbl. mark in average daily production for the week, and the Louden field in Fayette County, 46,000 bbls. The production of these pools comprised nearly 77 per cent of the total production of the basin fields last week. The Texas Co. is reported to have put its O.K. on 50 locations in the Salem field. Eighty-two new operations were started in the state.

Daily production of new fields, 190,620 bbls.; old fields, 8,790 bbls.; total, 199,410 bbls.

Total operations including locations, rigs and wells drilling 438.

Marion County

In Marion County, Arthur Harvey's discovery well, northwest of the Salem pool, was completed. It is No. 1 Mercantile Bank, C N half NE SE Section 33-3n-2e. It was acidized with 1,000 gallons in McClosky lime at 2,160-93 feet. It pumped 178 bbls. of oil and 70 bbls. of water. No showings were reported in the upper sands. Benoist was topped at 1,970 feet and Aux Vases at 2,029 feet.

In the Salem pool, Marion County, Ohio Oil Co. No. 7 Lloyd, SW NW NE Section 33-2n-2e, Benoist sand at 1,788-92 feet, Aux Vases at 1,830-68 feet, pumped 150 bbls. Texas Co. No. 5 Richardson, NW NE SW Section 32-2n-2e, Benoist at 1,677-1,719 feet, flowed 127 bbls. in three hours, rated at 889 bbls. a day. Texas No. 8 Friesner, SW SE NW Section 32-2n-2e, Benoist at 1,671-1,718 feet, flowed 113 bbls. in three hours, rated at 790 bbls. a day. Texas Co. No. 3 Farthing A, SE NW SE Section 32-2n-2e, Benoist at 1,740-96 feet, flowed 87 bbls. in three hours, rated at 609 bbls. a day. Shell Oil Co. No. 7 Farthing, NE SW NE Section 32-2n-2e, Bethel sand at 1,728-89 feet, shot with 15 quarts on bottom, flowed 828 bbls. Texas No. 2 H. Shanafelt, NE SW NE Section 21-2n-2e, Benoist at 1,739-51 feet, pumped 18 bbls. in three hours, rated at 126 bbls. a day. Magnolia Petroleum Co. No. 28 Chitwood, SW NW SE Section 16-2n-2e, McClosky lime at 1,988-2,070 feet, flowed 290 bbls. in six hours, rated at 1,150 bbls. a day.

Max Pray No. 4 Cole, NE cor. SE NW SE Section 16-2n-2e, corrected location, McClosky lime at 2,075-85 feet, flowed 500 bbls. through 2½-inch tubing.

Texas Co. No. 9 Bryant, NW SE NW Section 9-1n-2e, Benoist sand at 1,863-90 feet, pumped 29 bbls. in three hours, rated at 203 bbls. a day. Texas No. 19 V. Kalkbrenner, SE SE SW Section 5-1n-2e, McClosky lime at 1,976-95 feet, pumped 45 bbls. in three hours, rated at 315 bbls. a day. Texas No. 12 Hawthorne, NW SW SE Section 5-1n-2e, McClosky at 1,957-65 feet, pays from 1,967 to 1,989 feet, flowed 20 bbls. in three hours, rated at 140 bbls. a day. Texas No. 6 Heydrick, SW SE NE Section 4-1n-2e, Benoist at 1,872-83 feet, pumped 33 bbls. in three hours, rated at 231 bbls. a day. Johnson & Betts No. 1 Johnson, NE NW NE Section 32-1n-1e, dry and abandoned at 1,923 feet.

In Jefferson County, Beaver and others No. 2 Eichman, NW NE NE Section 28-2s-1e, McClosky lime at 2,251-79 feet, total depth 2,283 feet, acidized with 500 gallons, dry and abandoned. Midfield Oil Co. No. 1 R. T. Ervin, SW cor. SE SE Section 24-2s-1e, total depth 2,333 feet, acidized with 1,000 gallons in McClosky lime topped at 2,305 feet, dry and abandoned.

In Wayne County, Pure Oil Co. No. 3 Behemyer A, C E half SE NE Section 4-1n-8e, Fredonia top at 3,025 feet, showings and pays from 3,037 to 3,070 feet, flowed 871 bbls. Pure No. 1 Butt Consolidated, C S half NE NE Section 10-1n-8e, Fredonia at 3,084 feet, pays and showings 3,091 to 3,118 feet, flowed 1,125 bbls. Oil Well Drilling Co. No. 1 McPherson, C S half NW NW Section 3-2s-7e, Roseclair lime top at 3,180 feet, pays 3,241-54 feet, flowed 22 bbls. per hour through

open tubing; later flowed 240 bbls. in 24 hours, choked down.

In Washington County, Shell Oil Co. No. 1 Klozak, SW NW SE Section 15-3s-3w, Codes pool, Bethel sand at 1,256-84 feet, shot with 10 quarts, pumped 121 bbls. W. C. McBride, Inc., No. 2 Wiese, NE SW SE Section 15-3s-3w, Bethel at 1,237-64 feet, shot with 10 quarts, pumped 264 bbls. McBride No. 1 Wiese, NW SW SE Section 15-3s-3w, Benoist sand at 1,256-85 feet, shot with 15 quarts, pumped 214 bbls. of oil and 10 bbls. of water.

New Wildcat Work

First reports on new wildcat operations included the following:

In Clark County, Strickler and others No. 1 Torman B, SE SW SE Section 26-10n-13w of second principal meridian, pits dug. Breeding and others No. 1 Gard, NW SE SE Section 2-9n-12w, drilling at 70 feet. Strickler and others No. 1 O. E. Torman, NW NW NW Section 13-9n-13w, pits dug.

In Cumberland County, Culpepper No. 1 Gardner, NE SE NE Section 2-10n-10e, spudded.

In Effingham County, T. D. Henry and others No. 1 Miller, SW SW NE Section 26-7n-7e, rig up.

In Washington County, James McIlwain No. 1 Pieper, 100 feet from south and 1,220 feet from west lines of SE quarter Section 29-1s-5w, location. Harry Horter No. 1 Flanans, SE SW NW Section 10-2s-4w, drilling at 755 feet.

In Wayne County, Carl Robinson No. 1 Carter, SE NE NW Section 15-2s-8e, spudded. Corley and others No. 1 Draper, SE NW NE Section 15-3s-6e, spudded. Will start drilling with rotary on May 15.

In Jefferson County, Armstrong and others No. 1 Scott B, 1,210 feet from north and 550 feet from east lines of NW quarter Section 23-3s-2e, set 10-inch casing at 60 feet and were drilling plug.

In St. Clair County, Longreen No. 1 Schaller, NW NE NW Section 10-3s-7w, moving in rotary tools.

In Jefferson County, Pyramid Petroleum Co. No. 1 Inland Steel, C S half NW SW Section 30-4s-2e, set 10¾-inch casing at 137 feet.

In Saline County, Coast Production Co. No. 1 Choisser, NE NW NW Section 5-8s-7e, shut down at 1,870 feet for repairs, an old well drilling deeper.

In Gallatin County, Byron Glascoe No. 1 Williams, 500 feet from north and 100 feet from west lines of NE SE Section 20-9s-9e, rig up. F. R. Jackson No. 1 Turner, C NW Section 27-9s-9e, rig up.

Active Outposts

In Tazewell County, Norton No. 1 Struck, NW NE SE Section 18-25n-3w, drilling at 550 feet.

In Sangamon County, Millar and others No. 1 Sample, NW SW NE Section 11-15n-3w, drilling at 1,600 feet.

In Shelby County, Independent Refining & Producing Co. No. 1 Hackenburg, SE SW SW Section 20-12n-2e, St. Louis lime top at 1,705 feet, drilled to 1,715 feet, and shut down for orders.

In Christian County, Meyer A. Marks No. 1 Buhs, SE SW NW Section 13-11n-1w (corrected location), drilling at 210 feet.

In Clark County, H. R. Snavely No. 1 Scholfield, SE NE SE Section 6-11n-11w of second principal meridian, total depth 855 feet, waiting for casing. Harry Dunn and others No. 1 Medsker, C NE NE Section 7-9n-12w of second principal meridian, drilling at 630 feet. Leatherman No. 1 Tyhurst, NW SW SE Section 26-9n-14w of second principal meridian (corrected farm name and location), spudded.

In Cumberland County, National Consumers Oil Co. No. 1 Ward, NE SE NE Section 17-9n-9e, total depth 2,152 feet, plugged back to 2,138 feet, running tubing to test. Manitou Petroleum Co. No. 1 Wilcox, NW NE NE Section 23-10n-10e, set 8-inch pipe at 80 feet and moving in standard tools.

In Montgomery County, Cassins and others No. 1 Wilkering, NW SW NE Section 34-10n-2w, drilling at 2,126 feet. Marhill Oil Co. No. 1 Doyle, SE NE SW Section 29-10n-4w, rigged up machine.

In Coles County, W. R. Miller No. 1 McConnell, SW NW NW Section 23-11n-10e, plugged back to 585 feet; casing set at 486 feet, putting on pump.

In Crawford County, Producers Oil & Development Co. No. 1 Snyder, C W half SW NE Section 7-8n-13w, drilling at 1,340 feet.

In Bond County, Reisig & Quisenberry No. 1 Wilderman, SW cor. NE NE NE Section 3-6n-3w, drilling at 2,365 feet.

In Jasper County, George W. Grier No. 1 Crouse, C SW SE Section 30-6n-9e, drilling at 2,780 feet.

In Effingham County, Kingwood Oil Co. No. 1 McWhorter, C E half SE NW Section 15-6n-6e, drilling at 6,106 feet.

In Clay County, Riley and others No. 1 Smith, NW NE NW Section 21-5n-5e, showed water at 2,331-34 feet, in Aux Vases sand, set 7-inch casing at 2,334 feet, total depth 2,338 feet, in sand. Dick Duncan No. 1 Huber, SW SE NW Section 17-5n-5e, shot with 30 quarts on bottom, made a half barrel of oil and water every 30 minutes. Cleaning out at 2,437 feet. Burnett No. 1 Liggett, SW NE SE Section 17-5n-5e, drilling at 2,400 feet. F. J. Searight No. 1 Wilson, SW NW NW Section 6-5n-5e, Fredonia lime top at 2,502 feet, shut down for orders at 2,552 feet. Phillips Petroleum Co. No. 1 Murvin, SW SW NE Section 22-5n-7e, drilling at 2,450 feet.

In Fayette County, L. V. Garnier and others No. 1 Wade, NE NW SE Section 31-5n-4e, drilling at 2,150 feet.

In Lawrence County, Scott Gray No. 1 fee B, CSL SE NE Section 13-4n-11w of second principal meridian, total depth 1,126 feet, making repairs. Eason Oil Co. No. 1 Bank, NE NE NW Section 24-4n-3w, 4½-inch casing set at 1,149 feet, fishing for bit.

In Clay County, Pure Oil Co. No. 1 Stanford, C E half SE SW Section 32-3n-8e, drilling at 2,209 feet. D. Davis No. 1 Carlson, C N half SW SW Section 34-1s-7e, drilling at 2,472 feet.

In Richland County, Leathers and others No. 1 Yonaka, NW SE SW Section 22-2n-14w, total depth 3,062 feet, plugged back to 3,444 feet and waiting for cement to set.

In St. Clair County McIlwain No. 1 McNulty, SW SW SE Section 32-2n-7w, drilling at 697 feet, Ste. Genevieve lime topped at 655 feet.

In Marion County, Menhall and others No. 1 Hazelwood, NE cor. SW Section 8-2n-1e, drilling at 1,660 feet. Benoist and Aux Vases tested water. Bowden No. 1 Martin, C S half SW SW Section 10-2n-2e, total depth 2,267 feet, running 5½-inch casing to shut off water. Hensky and others No. 1 Yoos, NW cor. NE SW Section 6-1n-1e, total depth 1,300 feet, shut down for orders. Hardeman and others No. 1 Hess, NE cor. NW NE Section 19-1n-2e, total depth 2,356 feet. Will deepen to the Devonian lime.

In Clinton County, McBride, Inc., No. 1 Keister, SE SW NE Section 6-2n-1w, underreaming 8-inch casing at 1,020 feet, total depth 1,055 feet. Petroleum Service, Ltd., No. 1 Botts, NW SW SW Section 17-2n-2w. shut down at 500 feet.

In Wabash County, W. M. Bartlett No. 1 Stans-

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May Be Third Daviess County McClosky Pool; More Activity

OWENSBORO, Ky., May 8.—J. C. Preston and others, drilling about 4 miles northeast of Owensboro, found saturated McClosky lime in their wildcat on the Charles Able farm, at a depth of 1,419 feet. When the bit had penetrated 3 feet of the formation the hole commenced filling with oil, which rose 1,100 feet. There was considerable gas along with the oil. This is the first indication of McClosky lime production in Daviess County east of Owensboro. Other McClosky tests drilled to the east of the city have been dry or have shown sulfur water. Only in the Birk City and Cane Run sectors of Daviess County has McClosky paid off. This well is 5 miles from any sort of production, while the nearest McClosky production is at Cane Run, 15 miles distant. The Preston well caved somewhat, and at this writing had not been given a production test.

In the Narrows district in Ohio County, Man & McLaughlin have a well in the Cunningham sand on the Fentress land, which flowed 20 bbls. a day naturally. This is the third productive sand on the lease. It was expected to be shot into 100-bbl. producer. No. 1 Fentress of the same firm, was a McClosky lime well good for 40 bbls. a day, and No. 2 Fentress produced from Barlow sand at 481 feet. No. 3 was at a total depth of 610 feet in the Cunningham and is the only Cunningham oil well in the neighborhood. Two other tests were started in the past week by other operators.

Efforts to lay a pipe line to the Springrose Drilling Co.-Ray Pillman well, near Reed, which have been thwarted because of rains and high water, will be resumed today.

The long flood period which has held up operations in Western Kentucky since early in the year is on the way out, and already field conditions are improving and more work is being started.

Breckinridge County, Glen Dean district: Stewart Petroleum Co. No. 1 C. V. Robinson, drilling at 200 feet. Cloverport district: C. A. Johnson and others No. 2 William Snyder, total depth 200 feet, lost casing and abandoned the hole.

Daviess County, 4 miles northeast of Owensboro: J. C. Preston and others No. 1 Charles Able, top of McClosky saturation at 1,419 feet; after drilling 3 or 4 feet in saturation 1,100 feet of oil rose in the hole, with considerable gas pressure. The hole caved considerably but looks as if it may turn into a flowing well. Utica district: Globe Oil Co. and others No. 8 Clark Heirs, estimated 100 bbl.-well in Jett and Jones sands. W. E. Hupp and others No. 1 Mrs. A. W. Akins, moving in. Master Oil Co. No. 2 Price Baird heirs, moving in. Ohio Oil Co. No. 2 Steve Coomes, spudding in. J. C. Ellis and the Petroleum Co. No. 6 A. T. Hansford Estate, moving in. Cane Run school district: Cane Run Petroleum Co. No. 4 I. N. Alsip, dry hole, through Jones sand. Red Hill school district: B & B Oil Co. and Fred Hupp No. 7 Homer Cossler, location. Shorts district: Finwil Drilling Co. No. 1 J. H. Sloan, reports 10 feet of McClosky saturation; will acidize; total depth 1,320 feet.

Hancock County, Lyonia district: I. C. Huff and others No. 1 Lou Richards, drilling at 150 feet.

Hopkins County, one-half mile east of Dalton: M. B. Hughes and others No. 1 Bura Brown, spudding in.

Muhlenberg County, Cleaton district: South Penn Oil Co. No. 1 Rogers Brothers Coal Co., dry hole, total depth 2,234 feet.

Ohio County, Narrows district: Man & McLaughlin No. 4 T. P. Fentress, estimated 20-bbl. well, flowing naturally from Cunningham sand, total depth 610 feet; will shoot. Walter O'Hara and others No. 1 Charles Petty, moving in. L. & D. Oil Co. No. 1 M. E. Powers, moving in.

EASTERN KENTUCKY

ASHLAND, Ky., May 8.—Operations in the eastern Kentucky fields continued at about the same pace this week with drilling proceeding at an even rate. No completions were reported.

In Floyd County, the Kentucky West Virginia Gas Co. had reached 2,457 feet in shale, in No. 566 on Samuel Dillion land on Ivy Creek, and was cleaning out No. 5250, William Crider land, on Johns Creek, at 1,925 feet. Inland Gas Corp. was drilling at 2,170 feet, in brown shale, in No. 200 Layne Heirs land.

In Knott County, Inland Gas Corp. was drilling at 2,007 feet, in Salt sand, in No. 208, Lonnie Amburgy land, on Carrs Fork, and has locations made for No. 209, Joseph Pigman land, on Troublesome Creek, and No. 210, E. H. Pigman on the Right Fork of Troublesome Creek. The Kentucky West Virginia Gas Co. had reached 1,671 feet in No. 579 Sherwood Osborn, on Little Doty Branch, with drilling continuing in red rock. The same firm is down 1,971 feet in lime in No. 580, H. H. Smith land, on Caney Fork.

In Martin County, Kentucky West Virginia Gas Co. was drilling at 1,175 feet, in slate, in No. 5252, Clery Taylor land, on Linbark Fork of Coldwater Fork.

In the South Fork district of Powell County Evans Oil & Gas Co. completed No. 4 W. M. Rogers at Pilot, according to reports. The well reached a total depth of 900 feet but production data is not available. Joe T. Brown is down 400 feet in No. 3 Matt Lowery, near Pilot. J. P. Perry is drilling at 700 feet in No. 1 Woodwards Heirs at Rogers Chapel.

field, SW SE SE Section 19-2s-13w of second principal meridian, total depth 1,635 feet, running casing.

In Washington County, Morgan and others No. 1 Dawkins, SW SE SW Section 15-2s-1w, making repairs, total depth 1,610 feet.

In Wayne County, Whitley No. 1 Duke, C N half NE NE Section 28-2s-6e, drilling at 3,210 feet. Leo Lauk and others No. 1 Felix, C E half NE SE Section 27-2s-8e, drilling at 570 feet. Sloan Oil Trust No. 1 Ben Crews, NW NE SE Section 6-2s-9e, rig up. Summers and others No. 1 Felix, SE SW SE Section 27-2s-8e, rigging up rotary. Carl Robinson No. 1 Oakley, NW NE NE Section 34-2s-8e, pay at 3,384-3,411 feet, swabbing and flowing into pits for 12½ hours; oil turned into tanks; no gauge. New Penn Development Co. No. 1 Scott, SW cor. NW NW SE Section 7-2s-9e, total depth 3,467 feet, plugged back to 3,416 feet and acidized with 1,000 gallons, pumped salt water for three days; will plug back again. Same operator's No. 1 Baker, SE NW NW Section 21-2s-9e, drilling at 2,200 feet.

In Jefferson County, Armstrong and others No. 1 Scott, SE NW SE Section 23-3s-2e, plugged back total depth 2,838 feet, set 7-inch casing at 2,821 feet, pumped 174 bbls. of fluid, about 40 per cent water, testing.

In Franklin County, Adams Oil & Gas Co. No. 1 Old Ben Coal Co., SW SW NE Section 19-5s-2e, was drilling at 4,549 feet with no oil showing. Devonian lime was topped at 4,516 feet.

In Gallatin County, Coates and others No. 1 Green B, SE cor. Section 17-8s-9e, total depth 1,794 feet, set 5½-inch casing at 1,767 feet, shot sand at 1,775-94 feet with 20 quarts, pumped 91 bbls. of 37.5-gravity oil in 14 hours, testing.

In White County, Mazda Oil No. 1 Carmi Orphanage, SE SE NE Section 22-5s-9e, moving in rotary tools. Arab Petroleum Co. No. 1 Pearce, NE NE NW Section 35-6s-10e, Fredonia lime top at 2,865 feet, drilling at 3,050 feet.

In Washington County, Thompson Drilling Co. No. 1 Rosanski, NW NW SW Section 19-3s-1w, shot with 20 quarts at 1,250-60 feet, swabbed 9 bbls. of oil and 12 bbls. of water in eight hours, will put on pump. Pollack No. 1 Leibrock, SE SE SW Section 2-3s-3w, underreaming at 1,275 feet. Magnolia Petroleum Co.'s J. J. Broadus No. 1 Chapman, NW cor. SE Section 35-3s-3w, was a hole full of water at 1,310 feet, and was shut down for orders.

OHIO

MARIETTA, Ohio, May 8.—The Oriskany test, 4 miles northwest of Ravenswood, W. Va., in Section 22, Lebanon Township, Meigs County, Ohio, being drilled by Roy Proffit and others on the E. O. Taggart tract, found the top of the Corniferous lime at 4,300 feet, with the top of the Oriskany sand 110 feet in the lime. The hole was drilled 2 feet into the sand and operations shut down. There was no showing of gas in the first two feet.

Dry holes predominate Ohio completions this week, operators marking up seven of them against five gassers and two small oil wells.

Ashland County, Lake Township, Gold Crown Oil Co. No. 3 A. A. Easley, Section 21, made 5 bbls. of oil the first 24 hours after shot.

Athens County, Canaan Township, Speary Oil & Gas Co. No. 3 Emma Poston, Section 11, is dry in the second Berea sand, total depth 1,473 feet. Athens Township, H. C. Hartley No. 2 O. O. Baker is an oil well making 5 bbls. the first 24 hours after a shot from the Berea sand at 1,125-30 feet.

Benedum & Trees No. 1 F. L. Miner, Lot 44, Mayfield Township, Cuyahoga County, is good for 2,000,000 cu. ft. of gas and 10 bbls. of oil from the Newburg at 2,787 feet.

Guernsey County, Millwood Township, George Jewell and others No. 1 T. R. Thomas, Section 22, is a small gas well in the Berea sand gauging 80,000 cu. ft. open flow at 1,483-86 feet.

Fairfield County, Berne Township, City Natural Gas Works No. 2 John Stuckey has an open flow of 200,000 cu. ft. in the Clinton sand at 2,124-55 feet.

The wildcat test in Wadworth Township, Medina County, drilled by Burtner, Morgan & Sleven on the M. E. Swineheart farm, Section 10, has only a small showing of oil and gas in the Clinton at 3,794-2,813 feet, sand 3,776-3,821 feet, abandoned at 3,945 feet.

Perry County, Monroe Township, Altier & Sons No. 2 Sarah E. Gladden, Section 10, is a small gas well in the Berea sand at 1,092-1,105 feet.

Stark County, Jackson Township, Obermiller Brothers No. 1 L. Bain, Section 1, gauged 250,000 cu. ft. of gas from the Clinton sand at 4,381-4,407 feet. Lake Township, Brendal Producing Co. No. 1 Congress Lake Club found the Clinton sand broken and dry, total depth 4,739 feet. Plain Township, Lyons Co. No. 1 Ira Sheets, Section 6, showed some gas at 4,410-50 feet and a little oil at 4,456-87 feet, shot failed to improve, abandoned.

Washington County, Marietta Township, Hupp & Yerian No. 12 County Infirmary made a showing of oil in the Michael sand at 460-65 feet; it was shot with 100 pounds gelatin but showed no improvement; abandoned.

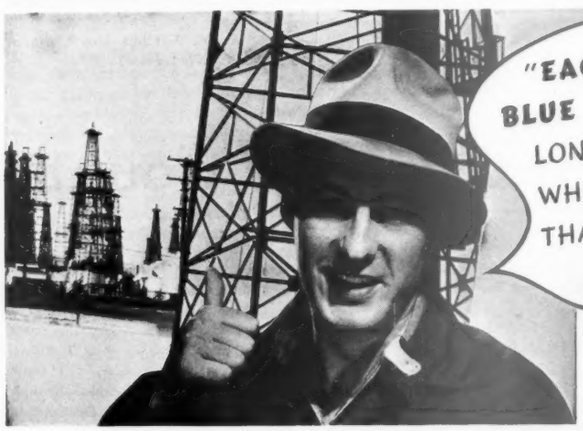
Lima Field

The Sun Oil Co. No. 1 H. E. Cross, Section 13, Plain Township, Wood County, topped the Trenton rock at 1,115 feet; a small showing of gas was found at 1,123 feet; now drilling at 1,275 feet.

Goodwill Oil & Gas Co. recovered a lost bit and resumed drilling on the No. 1 Lester Shinew in Section 5, Portage Township, Wood County. A showing of asphalt was found at 1,887 feet.

South American Handbook

Persons contemplating visiting Brazil or any of the Spanish American countries will find helpful information in the 1939 edition of the South American Handbook, recently published in London and distributed in the United States by H. W. Wilson Co., New York. It deals one by one with all the countries southward from Mexico to Tierra del Fuego. Relevant details are given about the main towns, physical features of the country, government, and constitution, sources of agricultural and mineral wealth, coinage and measures, imports and exports, postal charges, transport, hotels, guidance for travelers, and many other details. Air, rail, steamship, banking and insurance facilities are summarized, and separate sections of the book are devoted to literature, products and sports of the southern countries.



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Kansas Developments

By
DAL DALRYMPLE

Wildcat Test in Gray County; Uncover Basal Sand at Prusa

Several new wildcat tests were reported in Kansas the past week, in addition to a number of other outposts that will extend proven areas if they find production. The wildcats reported for the first time included:

Champlin Refining Co. and Indian Territory Illuminating Oil Co. No. 1 Dirks, SW Section 34-28-29w, Gray County, about 3 miles southwest of Montezuma. It is about 20 miles east of gas production in Haskell County, and about 50 miles northwest of the Morrison oil pool in Clark County and an equal distance southeast of the Nunn oil pool in Finney County.

Vernon Oil & Gas Co., M. B. Armer and others No. 1 Hoffman, NW SW Section 18-16-11w, is in Barton County, 1½ miles northwest of the Prusa pool.

Phillips Petroleum Co. No. 1 Brandenstein, C SE NW Section 35-19-10w, Rice County wildcat, was below 2,000 feet. It is 1 mile east of the Silica field and 1½ miles west of the Chase pool.

Hartman & Blair No. 1 Brown, SE NW Section 33-30-4e, is in Cowley County, north of the Hittle pool and west of the David area.

Elbar Co. No. 1 Martin, NE SE SE Section 34-26-7, is a Butler County wildcat, between the Young and Seward areas.

Other outposts recently announced will extend, if production is found, the Laton pool, Rooks County; Morel pool, Graham County; Lost Springs pool, Marion County; North Canton pool, McPherson County; Heinz pool, Rice County; Chase field, Rice County; Barngrover pool, Rice County; Wherry pool, Rice County; Goodrich pool, Sedgwick County; Eastborough pool Sedgwick County; Augusta pool, Butler County; Haferman pool, Rice County; Winfield pool, Cowley County; Burrton pool, Harvey County, and Wellman gas area, Rice County.

The Laton pool in Rooks County was extended three-fourths mile northward at George Seidhoff and Broadview Oil Co. No. 1 Beardmore, NW SE SW Section 2-9s-16w. It was bottomed at 3,210 feet in Lansing lime and made 24-hour potential of 517 bbls. of oil.

Basal sand production was found in the Prusa pool, Barton County, at Sinclair Prairie Oil Co. No. 1 Schmidt, NE NE NW Section 20-16-11w. It missed Arbuckle lime, topped the LaMotte sand at 3,304 feet and drilled to 3,310 feet. Oil rose 2,850 feet in the hole in 16 hours and operators were preparing to test. The Otis-Albert field is the only other Barton County area producing from Basal sand.

Russell County

Cities Service Oil Co. No. 2 Podszus, SW NE SW Section 25-15-14w, Trapp field, Russell County, found Arbuckle lime at 3,294-3,301 feet, total depth, and made daily potential of 1,309 bbls. of oil by echometer.

Another well in the Trapp field was completed at Landon No. 2 Hall, SE SW SE Section 11-15-14w. It had Lansing-Kansas City lime at 3,058-87 feet, pumped 598 bbls. of oil in eight hours and made 24-hour potential of 1,795 bbls.

Cities Service Oil Co. No. 1 Esfield, NW cor. Section 22-15-13w, Fairfield area, pumped 234 bbls. of oil in eight hours and made potential of 702 bbls. daily. Production was from Lansing-Kansas City lime found at 3,083-90 feet.

Wolf Creek Oil Co. No. 2 Witt, SE SE SW Section 10-14-15w, was completed at 3,260 feet, total depth, for potential of 1,727 bbls. of oil daily, by depthograph. Top of Gorham sand was 3,252 feet.

Mid-Continent Petroleum Corp. No. 6 Letsch, NE SE NW Section 26-14-13w, made daily potential of 1,411 bbls. of oil and was completed at 2,900 feet, total depth. Lansing lime was topped at 2,857 feet. It was acidized with 4,000 gallons.

Republic Natural Gas Co. No. 3 Giese, SW SW NE Section 28-14-13w, had Lansing lime at 2,858 feet, was bottomed at 2,913 feet, acidized with 10,000 gallons and made potential of 768 bbls. of oil.

Coralena Oil Co. No. 12 Deines, SW SW NE Section 36-15-14w, was a location. Cities Service Oil Co. No. 7 Bender, NE SW NW Section 25-15-14w, was moving in material.

Among the Wildcats

C. L. Carlock No. 1 Houston, SW SE SW Section 3-31-4, wildcat in Cowley County, topped Arbuckle lime at 3,335 feet and was dry and abandoned at 3,389 feet, total depth.

Bess & Gralapp No. 1 Clark, NW NW NE Section 11-31-3, Cowley County wildcat, had Mississippi lime at 2,995 feet and was temporarily abandoned at 3,248 feet, total depth.

I. W. Murfin No. 1 Birzer, NE NE SW Section 21-19-11w, wildcat in Barton County, found Lansing-Kansas City lime at 3,060 feet and was dry and abandoned at 3,405 feet, total depth.

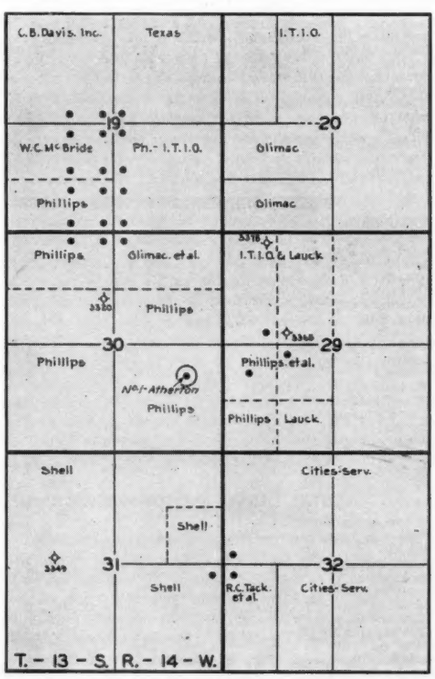
Phillips Petroleum Co. No. 1 Brandenstein, C SE NW Section 35-19-10w, new Rice County wildcat, was drilling below 1,390 feet.

Armer & Vernon Oil & Gas Co. No. 1 Hoffman, NW NW SW Section 18-16-11w, Barton County wildcat, had dug cellar.

Fred Jones No. 1 Habiger, NE SE SW Section 9-18-10w, wildcat in Rice County, was a location.

Carey & Jennings No. 1 Kelley, C SW Section 20-27-4, Butler County wildcat, was shut down at 265 feet.

Hartman & Blair No. 1-A Brown, SE SE NW Section 33-30-4, wildcat in Cowley County, had dug cellar.



Midcontinent Map Co., Wichita

The North Balta pool, in Section 29-13-14w, Russell County, was extended one-fourth mile westward in Section 30 with an Arbuckle lime producer

Estimated Daily Production

Estimated daily production for Kansas for the week ending May 6, and for the preceding week, was as follows:

	Barrels	
	May 6	Apr. 29
Oxford City	1,010	1,050
Burrton	9,900	8,800
Ritz-Canton	6,920	6,275
Graber	3,325	3,250
Hollow-Nikkel	3,255	3,175
Lerado	898	750
Voshell	1,745	1,700
Wellington	2,295	2,300
Ellsworth County:		
Lorraine	1,680	2,050
Other pools	1,185	1,450
Rice-Barton counties:		
Bloomer	2,325	2,425
Chase	4,740	4,625
Geneseo	4,085	3,250
Raymond	540	750
Silica	10,690	11,500
South Silica	2,625	2,400
Keesling	600	850
Wherry	3,655	4,725
Miscellaneous Rice	8,805	8,915
Miscellaneous Barton	9,050	7,950
Russell County	16,915	21,125
Sedgwick County	3,765	3,825
Ellis:		
Bemis	5,540	7,000
Miscellaneous	3,650	4,610
Kingman County	780	745
Stafford County	7,605	10,330
Greenwood County	9,750	9,050
Butler County	18,750	19,625
Other fields	21,832	23,225
Total Kansas	167,915	177,725

Rice County

Daily potential rating of 2,423 bbls. of oil was given Continental Oil Co. No. 3 Siemsen, NW SW NW Section 18-18-7w, after it had pumped 808 bbls. of oil in eight hours. Production was from Arbuckle lime at 3,211-17 feet, total depth. It is in the Geneseo field.

Same company's No. 3 Fuller, SW SW NW Section 12-18-8w, found Arbuckle lime at 3,237-41 feet, total depth, pumped 15 bbls. of oil an hour and made 24-hour potential of 953 bbls.

Cities Service Oil Co. No. 2 Lewis, SE SE NE Section 11-18-8w, was building rotary rig.

Gulf Oil Corp. No. 1 Nickols, SW SW NE Section 30-19-9w, was building rotary rig.

Gulf Oil Corp. No. 1 Cramm, NW NW SE Section 15-19-9w, Cramm area, found Arbuckle lime at 3,209 feet, total depth 3,216 feet, was acidized and made potential of 536 bbls. of oil.

Cities Service Oil Co. and others No. 2 De Witt, SW NW NE Section 33-19-9w, Campbell area, topped Arbuckle lime at 3,192 feet, was bottomed at 3,223 feet, acidized and made daily potential of 1,116 bbls. of oil.

Stafford County

The largest Kansas well of the week was Stanolind Oil & Gas Co.'s well in C N half SE NW Section 11-24-11w, Zenith field, Stafford County. It flowed 349 bbls. of oil in three hours and made 24-hour potential of 6,007 bbls. Misener sand was found at 3,716-18 feet, total depth.

Stanolind Oil & Gas Co. No. 6 Hayes, C N half SE SE Section 11-24-11w, had Misener sand at 3,746-59 feet, total depth, flowed 97 bbls. of oil in three hours and made daily potential of 621 bbls. of oil.

Same company's No. 7 Hayes, C S half SE SE Section 11-24-11w, was a location.

Ellsworth County

Cities Service Oil Co. No. 1 Mehl, SE SE NE Section 19-17-9w, Ellsworth County, Wilkens area, topped Arbuckle lime at 3,230 feet, was bottomed in lime at

(Continued on Page 141)

California Field Report

By
L. P. STOCKMAN

Proposed Proration Plan Is Defeated By a 14 to 14 Vote

LOS ANGELES, Calif., May 8.—The Central Committee of California Oil Producers, having failed to reach a decision on a proposal to inaugurate a new method of proration for California fields this week, the old method will be continued this month. The proposed method would permit all wells producing below 15 bbls. per day to produce to capacity, and would reduce the maximum allowable for large wells from 300 bbls. per day to 250 bbls. per day. This would throw all large wells into one classification although some consideration would be given to depth. According to some members of the Central Committee, it would increase production of heavy unrefinable crude oil and restrict production of light refinable oil. Fourteen members voted for the new plan and the same number voted to retain the present method of allocation. Lawrence Vander Leck, chairman of the group, voted to refer the proposed method back to the allocation committee for further study. The allowable for May will continue to be 575,000 bbls. per day with a tolerance of 2,000 bbls. daily to take care of new wells and any unforeseen contingencies.

Wilmington

The projected development of the tideland acreage in the Long Beach section of the Wilmington field of Los Angeles Basin and involving several million dollars is under way and within the next week or 10 days another five or six wells will begin making hole. Long Beach Oil Development Co. has spudded in the first two of 12 wells that will be drilled along the ocean front and this dozen wells will be followed by others at regular intervals. About 75 wells will be drilled under this contract between Long Beach Oil Development Co. and the Long Beach Harbor Commission and one provision is that at least 12 strings of tools must be maintained in operation until the contract has been completed. This work together with the tideland drilling being carried out by Signal Oil & Gas Co. will mean that the next several months will see the completion of almost 100 new wells. Operators holding acreage in the Long Beach Harbor section of the Wilmington field have an agreement to refrain from exploitation of the Ford zone until the end of the year. It is now a question as to whether it will be allowed to run its course, as Superior Oil Co. has started deepening No. 1 Seaside in the eastern end of the area. If this well is produced from the Ford zone it will mean that other operators will follow suit. The well may be shut in upon completion in which event no general deepening campaign will be undertaken. If development of the Ford zone is precipitated it will be impossible to regulate production of the field and thus may lead to serious consequences. The Ford zone has only been fairly productive in the west end of the Wilmington structure but substantial production is expected in the Long Beach Harbor area.

New Completions

Three new wells finished in the Wilmington field. Padreson Oil Co. No. 2-55-D was brought in flowing 418 bbls. of 15.9-gravity oil per day through a 40/64-inch bean from the Ranger zone with bottom of the hole at 3,670 feet. Union Pacific Railroad Co. No. 15 Edison, another Ranger zone completion, was brought in flowing 119 bbls. of clean 18.3-gravity oil per day from 3,244 feet. The initial shown by this well is only a portion of its potential as production was beaned back as soon as the well was completed. General Petroleum Corp. No. 15 Southern Pacific was completed flowing 935 bbls. of very clean 24.5-gravity oil and 1,000,000 cu. ft. of gas per day from the Terminal zone with bottom of the hole at 4,060 feet. This flow was coming through a 15/64-inch bean with the well showing a tubing pressure of 650 pounds and a casing pressure of 1,090 pounds.

The annual statement of Union Pacific Railroad Co. showed that approximately 25 per cent of its income came from its oil holdings in the Wilmington field and also that some of its acreage is claimed by the city of Long Beach to be tideland. The title to this is believed by Union Pacific officials to be valid notwithstanding the claim of the city of Long Beach. Union Pacific Railroad Co. is the largest holder of productive acreage in the Wilmington field and has occupied a prominent position from a development standpoint. A total of 620 producing wells have been finished since discovery of the field and it is believed that another 100 will be drilled this year. If the Ford zone proves as highly productive as anticipated another 250 may be drilled as many of the Terminal zone wells will be too good to take off production and convert them into Ford zone wells. The Wilmington field has produced 55,930,780 bbls. of crude oil between the time of discovery and March 31, 1939, and will probably produce another 200,000,000 bbls. during its lifetime.

Montebello

Two new wells and two recompletions were put on production in the Montebello field of Los Angeles Basin during the current week and this field, which appeared to be slowing down a few weeks ago, is again showing renewed activity. No. 1 Coffman of Graham & Loftus may force the State Department of Natural Resources to step in unless some restrictive measures are taken at once. This well was brought in flowing 1,142 bbls. of 36.5-gravity oil cutting 4 per cent from the lower member of the seventh zone and while the amount of oil produced is satisfactory the well is flowing 5,000,000 cu. ft. of gas per day. If gas production continues at this rate the Department of Natural Resources of the state is expected to order the well to be shut in or pinched back, to prevent gas waste. No. 1 Coffman, in the southeast end of the Montebello extension, was finished with 202 feet of 5½-inch liner including 110 feet of perforated and cemented through perforations at 7,442 feet. Union Oil Co. has staked location for No. 2 Calkins in the east end of the extension. This company made a formation test on No. 2 Wilcox from 6,630 feet to 6,692 feet and oil reached the surface in one hour and the well flowed at the rate of 280 bbls. of 35.1-gravity oil per day. Bottom of the hole is at 7,160 feet, but the lower part of the hole is behind a blank liner. The seventh zone was not tested but should result in substantial production.

In the west end of the field, R. R. Bush Oil Co. has reached a depth of 7,191 feet and is in oil sand with a 7-inch water string cemented at 7,050 feet in No. 1 Olds. The sixth zone in the west end of the field has begun showing the results of several months' production and is going slowly to water as edgewater encroaches. The

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 29		April 22			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	185,791	140,394
Fuel oil	.....	.....	63,760	9,109	657,526	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	258,358	36,908	148,970	21,281	761,324	921,778
Kerosene	.....	.....	.....	.....	122,200	199,453
Foreign exports—						
Crude oil	256,972	36,710	482,524	68,932	4,761,180	8,440,409
Fuel oil	.....	.....	188,782	26,969	2,549,932	2,596,244
Diesel and gas oil	218,178	31,168	171,298	24,471	1,912,699	1,979,678
Gasoline	271,991	38,856	259,512	37,073	2,794,998	2,302,680
Kerosene	.....	.....	.....	.....	584,941	410,971
Lubricants	.....	.....	.....	.....	42,034	.....
Coastwise-domestic—						
Crude oil	125,114	17,873	396,421	56,632	4,141,704	4,067,888
Fuel oil	297,385	42,484	193,214	27,602	3,217,780	3,795,215
Diesel and gas oil	42,171	6,024	28,651	4,093	852,325	621,287
Gasoline	356,687	50,955	212,608	30,373	4,537,706	4,907,592
Kerosene	20,133	2,876	.....	.....	149,138	106,043

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	61,281	8,754	61,281	.....
Diesel and gas oil	.....	.....	.....	.....	69,550	178,662
Gasoline	.....	.....	.....	.....	.....	9,499
Asphalt	.....	.....	.....	.....	140,426	212,419
Lubricants	.....	.....	4,013	573	8,183	3,009
Foreign exports—						
Crude oil	.....	.....	.....	.....	1,675,974	1,901,923
Fuel oil	.....	.....	.....	.....	885,259	669,194
Diesel and gas oil	122,986	17,569	122,228	17,461	705,545	529,294
Gasoline	165,365	23,624	40,948	5,850	1,100,126	1,573,702
Kerosene	33,773	4,825	.....	.....	303,112	301,247
Lubricants	.....	.....	5,513	788	168,709	148,287
Other finished oil	.....	.....	232	33	352	.....
Coastwise-domestic—						
Fuel oil	66,901	9,556	129,457	18,494	2,027,955	2,136,388
Diesel and gas oil	40,714	5,816	32,177	4,597	325,234	539,292
Gasoline	248,428	35,490	151,606	21,658	2,135,556	2,061,015
Kerosene	19,834	2,833	12,760	1,823	232,426	257,363

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	185,791	140,394
Fuel oil	.....	.....	125,041	17,863	718,807	.....
Diesel and gas oil	.....	.....	.....	.....	233,051	178,662
Gasoline	258,358	36,908	148,970	21,281	761,324	931,277
Kerosene	.....	.....	.....	.....	122,200	199,453
Asphalt	.....	.....	.....	.....	140,426	212,419
Lubricants	.....	.....	4,013	573	8,183	3,009
Foreign exports—						
Crude oil	256,972	36,710	482,524	68,932	6,437,154	10,342,332
Fuel oil	.....	.....	188,782	26,969	3,435,191	3,265,438
Diesel and gas oil	341,164	48,738	293,526	41,932	2,618,244	2,508,972
Gasoline	437,356	62,479	300,460	42,923	3,895,124	3,876,382
Kerosene	33,773	4,825	.....	.....	888,053	712,218
Lubricants	.....	.....	5,513	788	210,743	148,287
Other finished oil	.....	.....	232	33	352	.....
Coastwise-domestic—						
Crude oil	125,114	17,873	396,421	56,632	4,141,704	4,067,888
Fuel oil	364,286	52,041	322,671	46,096	5,245,735	5,931,603
Diesel and gas oil	82,885	11,841	60,828	8,690	1,177,559	1,160,579
Gasoline	605,115	86,445	364,214	52,031	6,673,262	6,968,607
Kerosene	39,967	5,710	12,760	1,823	381,564	363,406

result of the projected production test on R. R. Bush Oil Co. No. 1 Olds therefore will prove interesting. Traders Oil Corp. No. 1 Traders, completed early in the week, showed an initial production of 1,120 bbls. of very clean 35.6-gravity oil and 640,000 cu. ft. gas from the fourth finger of the sixth zone. This new well was brought in flowing through a 52/64-inch bean from 6,438 feet. Standard Oil Co. recompleted No. 3 Braun flowing 192 bbls. of 35.1-gravity oil per day from the fourth finger of the sixth zone with bottom of the hole at 7,135 feet and seventh zone untested. St. Helens Petroleum Co. now known as Kern-St. Helens Properties recompleted No. 20 Monterey flowing 1,075 bbls. of 35.5-gravity oil cutting 4.5 per cent and 1,100,000 cu. ft. of gas per day from the fourth finger of the sixth zone with bottom of the hole 6,530 feet. This well, a former upper zone producer, was finished with an 8⅝-inch water string landed at 6,221 feet and 349 feet of 6⅝-inch liner including 105 feet of 120-mesh and was cemented through perforations at 6,422 feet. Ridge Oil Co. No. 1 Golf Club, located more than 1 mile west of production in the western extension of the Montebello field, has reached a depth of 5,740 feet and is drilling ahead in a gray sand that appears to correlate with the productive fifth zone to the east. The bedding planes have become more pronounced and now range from 8 to 10 per cent.

Torrance

Drilling operations in the Torrance field of Los Angeles Basin resulted in the completion of five new wells this week and a check of development work under way indicates the probable completion of a like number during the next seven-day period. Drilling operations are drawing to a close in this field and hence the number of new wells completed will soon be substantially smaller. For the past 60 days there has been a noticeable drop in the initial daily production of new wells and the number of pumping wells has been consistently increasing. During the current week three of the five new wells completed required artificial stimulation. No. 2 Bruhn of Vesta Petroleum Co. was the largest well completed this week as it was brought in flowing 385 bbls. of 26.8-gravity oil cutting 4 per cent through a 24/64-inch bean from a depth of 5,155 feet. This well was finished with a 7-inch water string landed at 4,765 feet and 426 feet of 5½-inch liner including 389 feet of 120-mesh landed on bottom and 5,085 feet of 2½-inch tubing with packer at 4,722 feet.

No. 1 Starkey of Calusa Oil Co. has been completed flowing 176 bbls. of 26.9-gravity oil cutting 4 per cent through a 16/64-inch bean from a depth of 5,165 feet. Packard Oil Co. No. 1 Pollard, at 235th and Eshelman streets, has been completed at 5,138 feet, pumping 161 bbls. of 26.5-gravity oil cutting 5 per cent. Deep Hole Drilling Corp.'s No. 2 failed to result in commercial production as it was good for only 35 bbls. of 26.4-gravity oil cutting 45 per cent from 4,975 feet. This hole was carried down to 5,217 feet in search of a favorable oil sand but was later plugged back to the completion depth where a thin lens was cored. Chanslor Canfield Midway Oil Co., discoverer of the Torrance field, completed No. 49 Torrance pumping 201 bbls. of clean 27.8-gravity oil per day from 4,998 feet.

Coalinga

Discovery of the Southeast Coalinga field several months ago by Petroleum Securities Co. and the recent completion of a discovery well in a new productive area in the same general area by Amerada Petroleum Corp. has resulted in a concentration of activity in the Coalinga area of Fresno County and additional prospecting work is expected to be undertaken in the next several months. Shell Oil Co. has reached a depth of 6,690 feet in No. 48-30 Port Costa on the Turk anticline north of Coalinga and is definitely in the Temblor. About 5 miles northwest of Shell's wildcat on the Turk anticline, the Texas Co. staked a wildcat on the Burrell anticline. It will be No. 1 Loescher in Section 12-17-16. Superior Oil Co. will swing southwest of the Gatchell area for its next wildcat in Fresno County as location has been made for No. 1 Pleasant Valley Farming Co. which will be drilled in Section 22-20-15 about 4 miles southwest of the discovery well in the Gatchell or Southeast Coalinga field. Up in the Northeast Coalinga field, Amerada Petroleum Corp. has staked location for an offset to be drilled to its discovery well, No. 7-17 S.P.L., which is at present flowing 310 bbls. of very clean 32.6-gravity oil and 1,860,000 cu. ft. of gas per day through a 14/64-inch bean behind a tubing pressure of 2,650 pounds and a casing pressure of the same amount. On the Husing property in the northeast quarter of Section 18-19-16, Superior Oil Co. has staked location for an offset to Amerada's No. 7-17 S.P.L., and Bandini Petroleum Corp., which holds a lease on the southwest 160 acres of the same section, is making preparations to spud in No. 48-18 Webb. Union Oil Co., which holds a lease on the southeast quarter of Section 18-19-16, which adjoins the property on which the discovery well is located, has not yet made a move to undertake development, but will do so within a short time due to lease obligations which may make it necessary to drill two wells. In the Gatchell area, Petseahon has concluded drilling on No. 31-7-F in Section 7-20-16 at 7,269 feet and should have it tanking oil within the next few hours. This well has 469 feet of oil sand as compared with 589 feet of oil sand cored in Superior Oil Co. No. 1 Cagle, which still holds the record for having cored the most solid oil sand in this field.

Greeley—Ten Section

Standard Oil Co. completed its second Rio Bravo zone well in the Greeley field of Kern County this week when No. 11-16 Kern County Land in Section 20-29-26 was brought in flowing 5,000 bbls. of clean 38.2-gravity oil and 7,000,000 cu. ft. of gas per day from a depth of 11,519 feet. This new deep well, which confirms the existence of a prolific deep zone, was finished with a 6⅝-inch water string landed and cemented at 11,415 feet and 134 feet of 4¾-inch liner including 98 feet of perforated. This well, which has an elevation of 342 feet, topped the oil sand at 11,425 feet. No. 1 Elrich Community in Section 20-29-26 proved a duster at 13,538 feet and has been abandoned and No. 2 Fleishauer in the same section flowed salt water from 11,900 feet early this week. No. 11-17 Kern County Land, in Section 20-29-26, is at present drilling ahead in the pay at 11,517 feet and should prove to be the third completion in the deep Rio Bravo zone in the Greeley field of Kern County when given the chance to produce some time during the next week or 10 days. Shell Oil Co. extended the productive limits of the Ten Section field of Kern County about 500 feet to the east by completing No. 28-2-B Kern County Land in Section 28-30-26 flowing 3,596 bbls. of very clean 36.2-gravity oil and 2,720,000 cu. ft. of gas per day from the Stevens zone with bottom of the hole at 8,220 feet. This new well was finished with 7-inch water string landed and cemented at 8,028 feet and a 5½-inch liner landed at 8,216 feet.

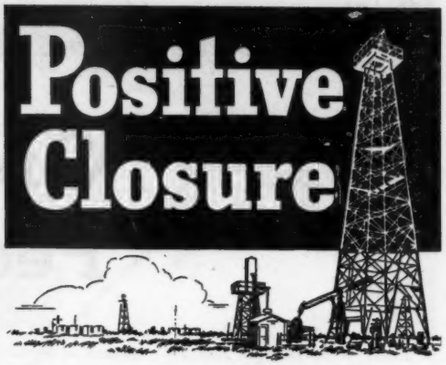
Kettleman Hills

Kettleman North Dome Association completed an excellent producing well in the east central part of the Kettleman North Dome field this week when No. 47-16-Q in Section 16-22-18 was brought in flowing 4,380 bbls. of very clean 37.5-gravity oil and 4,600,000 cu. ft. of gas per day from the Temblor with bottom of the hole at 7,855 feet. Top of the McLure shale was logged at 5,550 feet and top of the Temblor was cored at 6,908 feet. In the central part of the Kettleman North Dome field, Standard Oil Co. recompleted No. 261-11-P in Section 11-22-17 after deepening the hole from 6,284 feet to 7,666 feet, but failed to find as much crude oil as might be desired. This well, upon being returned to production, came in flowing 42 bbls. of crude oil and 4,200,000 cu. ft. of gas per day indicating that it is located in the gas cap area. Kenda's No. 54-24-H, out in the extreme western end of the structure in Section 24-21-16, tested wet and has been recemented at 10,790 feet. This well is bottomed in the Eocene and will extend the productive limits to the west as it is the most westerly drilling well in the Kettleman North Dome field at the present time.

Ventura Avenue

Shell Oil Co. completed an excellent flowing well in the Ventura Avenue field this week when No. 98 Taylor was brought in flowing 2,240 bbls. of 28.3-gravity oil cutting 6 per cent and 2,000,000 cu. ft. of gas per day from a depth of 8,230 feet and should have No. 33 Edison, another potential producer, ready for a production test within the next few days. No. 33 Edison has been finished as far as drilling operations are concerned at 8,230 feet and is being prepared for an early production test. Tide Water Associated Oil Co. recompleted No. 77 Lloyd in this field flowing on a compressor at the rate of 365 bbls. of 27.4-gravity oil cutting 12 per cent and 526,000 net formation gas from

(Continued on Page 143)



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Ordovician Pool Opened in Pecos County by Good Well

By
D. H. STORMONT

FORT WORTH, Tex., May 8.—Prospects of a good producer at the Ordovician strike in northern Pecos County and several small extensions to various southern basin oil pools centered the attention in that area, while the northern basin was featured by increased activity in Hockley County's Slaughter pool.

Storage tanks are being moved from Odessa to the Anderson-Prichard Oil Corp. and Monte Warner No. 1 M. I. Masterson, Ordovician oil pool opener in the shallower producing Masterson pool of northern Pecos County. The well meanwhile remains shut in, bottomed at 4,595 feet, 41 feet in the Ellenburger, Lower Ordovician, which was topped high when correlated with nearby tests to the deep level. On latest tests the well flowed 71.6 bbls. of oil the first hour of test, 23.4 bbls. the second hour, and 16 bbls. the third hour. Flow was through open 2½-inch tubing under a pressure of 40 pounds. Gas volume was estimated between 75,000 and 100,000 feet daily. Location is 1,980 feet from the northeast and northwest lines of Section 104, Block 10, H.&G.N. Survey.

Official gauge has been completed on Winkler County's Keystone pool extension well of last week. The R. E. Harding, Jr. and C. W. Morgan No. 1 Gulf-Jenkins, three-quarters of a mile north of production in the Keystone pool, flowed 285 bbls. of oil in 24 hours. Located in Section 13, Block 77, P.S.L. Survey, the well had topped sand pay at 3,292 feet, drilled to 3,400 feet and had been shot with 130 quarts from 3,350-92 feet.

In Ward County, McQueen & Clevenger completed their half-mile extension to the Sealy pool for 310 bbls. of oil in 24 hours. It is No. 1 Sealy, Section 47, Block F, G.&M.M.B.&A. Survey. The well was shot with 375 quarts from 2,814 feet to 2,930 feet.

Ector County's North Cowden pool received a three-quarters mile spread to production when J. M. Rush No. 1 Midland Farms, Section 100, W. L. Callahan Survey, vacancy strip, flowed 951 bbls. of oil in 24 hours. The well topped the pay at 4,355 feet and was shot with 440 quarts from 4,330 feet to 4,430 feet, total depth.

North Basin Area

With the Slaughter pool's first outlet since its discovery in April, 1937, due to be in operation by the middle of June, the area is experiencing a considerable increase in drilling activity. Motor Fuels Corp., which is building a refinery at Levelland in Hockley County to serve that county's Slaughter pool and neighboring Cochran County's Duggan pool, plans to have the plant in operation by June 15.

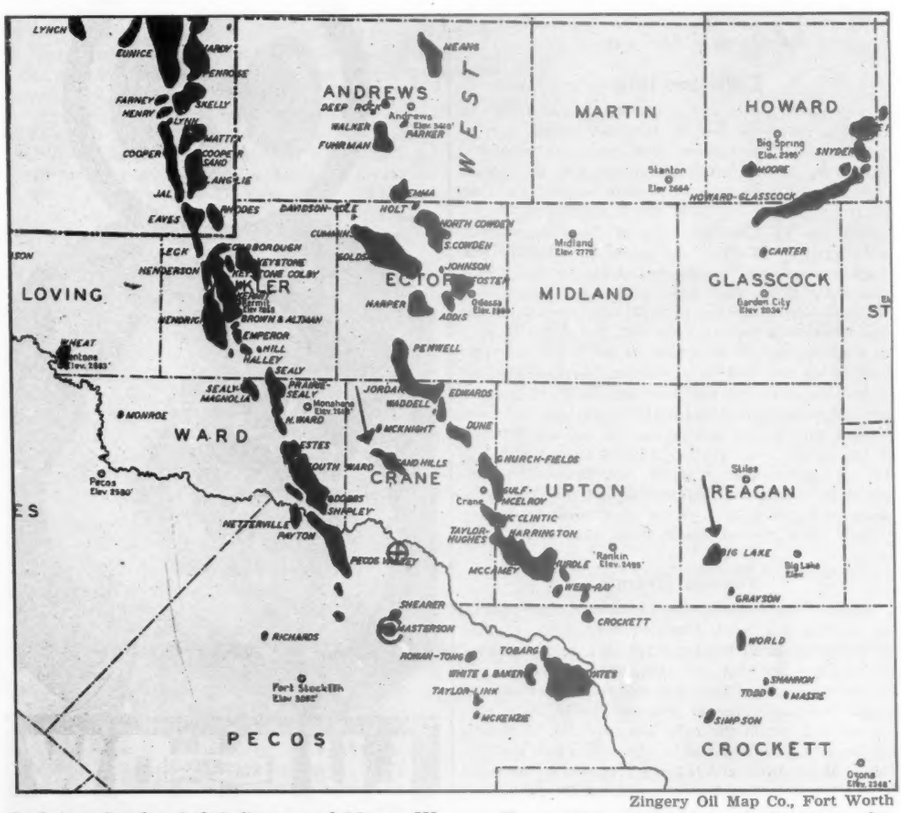
Honolulu Oil Corp. and Sid W. Richardson, two of the largest lease holders in the Slaughter pool, have announced new tests for the area, while the Texas Co.'s 2½-mile extension and Richardson's 1-mile extension of last week are showing for good wells. Honolulu Oil Corp. staked No. 1-10 Mallett in the northwest corner of Labor 10, League 52, Scurry County School Lands, as a south offset to the Texas Co. No. 1-B Mallett, producer 2½ miles northwest of the discovery well. Richardson has staked his No. 1-B Slaughter in the southeast corner of Labor 52, League 40, Maverick County School Lands, a west offset to his No. 1 Coe which recently extended the pool a mile northeast.

One mile northwest of the pool, Richardson No. 1 Sun-Denton, Labor 41, League 40, Maverick County School Lands, was given third-stage acid treatment during the week after which it responded with a flow of 400 bbls. of oil per day. Operator is pulling tubing to perforate casing in an effort to increase gas volume. Production is from 4,850 to 4,956 feet, total depth.

Two and one-half miles southwest of its No. 1-B Mallett, the Texas Co. No. 1-C Mallett, pushing production 5 miles west of the discovery well, was swabbing and flowing 20 bbls. of oil per hour, 2 per cent of which was basic sediment and water. The well had been treated with 2,000 gallons of acid at a total depth of 5,050 feet. Location is in Labor 11, League 51, Scurry County School Lands.

Stonewall County

Stonewall County may yet have a new oil field as a result of developments early last week at the Forest Development Corp. No. 1 Boyd, Section 45, H.&T.C. Survey. The test was, several weeks ago, abandoned as a failure after having at that time indicated a new pool for the county. Last week a leak developed in the tubing leading to the tanks erected on the lease and a head of oil sprayed trees for considerable distance around. Forest Development Corp. officials are hopeful, for a second time, that the No. 1 Boyd is a pool opener for Stonewall County. The test is bottomed at 4,700 feet.



Zingery Oil Map Co., Fort Worth

Anderson-Prichard Oil Corp. and Monte Warner No. 1 Masterson, deep Ordovician discovery in the Masterson pool, Pecos County. Arrows indicate the only other Ordovician production in the West Texas district. Dry hole is the Magnolia No. 1-A McKee

WEST CENTRAL TEXAS

A new eastern extension to the Griffin pool in Jones County, together with activity in the recently opened Appling area in the same county, and the staking of a deep wildcat location in southeastern Throckmorton County, featured the developments in the West Central Texas district.

Production in Jones County's rapidly expanding Griffin pool was spread farther to the southeast when a test being drilled by Lewis Production Co. flowed 250 bbls. in three hours. Located in the G. G. Muenzler lands of Section 199, B.B.B.&C. Survey, the test drilled oil saturated lime from 3,260-73 feet. Operators have skidded the rig 660 feet east of a well brought in last month in the northwest corner of the lease, for No. 3 Muenzler, the most eastern outpost for the pool.

In Jones County's newly opened Appling pool, discovered two months ago by Gregg Oil Co., two wells are drilling ahead seeking expansion. Grisham & Hunter, after losing the hole of their first attempt at a west offset, are drilling below 1,800 feet in a new hole. A quarter mile north of the discovery, George Callihan and others are drilling below 1,960 feet in the NW quarter of Section 32. Production in the discovery well is from 2,600 feet, in the Swastika lime.

Southeastern Throckmorton County received another try for deep production when Paul P. Steed of Dallas and Rogers & Rogers of Oklahoma City made a location for No. 1 R. P. Lee, in the NW cor. Section 197, B.B.B.&C. Survey, 6 miles southwest of Throckmorton. The wildcat is about 6 miles northeast of the Jones & Stasney No. 1 Brockman, Block 95, C.I.R. Survey, producing from a deep Strawn sand formation around 4,700 feet, making about 15 bbls. of high gravity oil daily. A second test in the general area of this small pool opener had been expected for some time. Jones & Stasney have plans under

(Continued on Page 141)

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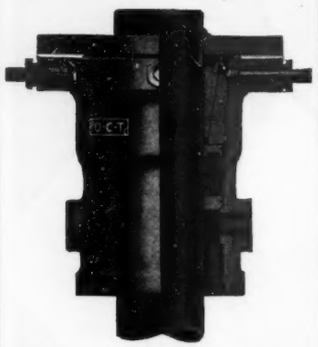

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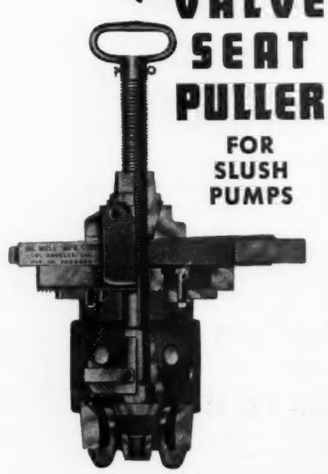

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Among the Drilling

RICHMOND DRILLING CO., Odessa, Tex., has received contract and is building derrick for a new 4,750-foot wildcat test in Ector County, Texas, and has staked location for a new wildcat in Andrews County, West Texas. The 4,750-foot wildcat is in Section 28, Block 45, T.&P. Survey, Ector County, and will be drilled for Conkling & White and J. T. Barnes as their No. 1 Thomas Estate. The test is 5 miles east of the Winkler County line. In Andrews County, Richmond Drilling Co., together with William F. Hanagan of Midland, has staked location for a wildcat in the southwest corner of Section 25, Block 12, University Survey. Scheduled to be drilled to 5,000 feet unless production is encountered shallower, the test will be spudded on or before June 1. The location is 3 miles west and slightly south of an abandoned test which encountered shows of oil from 4,400-50 feet.

KINGERY BROTHERS DRILLING Co., North Texas contractors, have been given contracts for two new tests in Cooke County, North Texas. The company will drill the Seitz, Comegys & Seitz No. 1 W. A. Harris, scheduled 3,000-foot test northwest of Muenster and near the Montague County line. Location is in the Ellerd & Haney Survey. The other test is Continental Oil Co. No. 1 Mary Gwyn, scheduled 2,000-foot test west of Lindsey in the F. J. Lindheimer Survey.

HELMERICH & PAYNE, Tulsa, are completing a link well in the Hull-Silk area, Archer County, North Texas. The test is No. 1 Shepherd, Nails Survey, and is due to link production in the north extension area. Saturation was drilled from 4,280-90 feet in the Strawn sand.

SID W. RICHARDSON, Fort Worth. Tex., is completing his No. 1 Sun Oil Co.-Denton County School Lands, Hockley County, West Texas, as a mile northwest extension to that county's Slaughter pool. The test drilled oil saturation in lime from 4,850 feet to 4,956 feet and after two-stage acid treatment, established a flow of about 400 bbls. of oil per day. The producer is bottomed at 4,956 feet.

S. J. TAYLOR, Tyler, Tex., will drill a wildcat test in Rusk County, East Texas, for Frank Tack, Tulsa. and associates of Fort Worth. The test, in the northwest quarter of the Jake McCrary farm, northeast part of the Maria F. Huejas Survey, is contracted to 4,800 feet. The test will seek production in the Paluxy formation of lower Trinity. Operators have assembled 2,900 acres in the block.

DELTA DRILLING CO. of Tyler, Tex., has five rigs operating in Arkansas for Lion Oil Refining Co., three in the Schuler field, Union County, and two in the Magnolia field in Columbia County. In Louisiana it has two rigs operating in the Shreveport backyard field for Hurricane Petroleum Corp.; in western McLennan County, Texas, a rotary rig drilling at 2,259 feet in Paleozoic.

HOUSH & THOMPSON are rigging up for a wildcat test in Iberville Parish, coastal Louisiana, for their No. 1 Kessler and Folse, about 6 miles east of the White Castle field. In Harris County, Texas, the same contractors' No. 1 J. B. Hine, a wildcat in the Lynchburg area, is scheduled to be abandoned after salt water was cored in the Frio sand at 5,692-5,722 feet.

ALLEN & MORRIS have started drilling operations on Ralph Ogden No. 1 Josephine Miller in the South Driscoll field, Nueces County, Texas. In San Patricio County, No. 1 Person, a wildcat being drilled for Seaboard Oil Co. is below 2,633 feet in shale, while in the La Rosa field, Refugio County, three operations are reported for Coronado Corp.

SMITH & McDANNALD abandoned No. 1 A. P. Haury, a southwest flank test on the Danbury dome, Brazoria County, Texas., while in the Magnet field, Wharton County, and about 1 mile northeast of production, No. 1 Mary L. Marti, which is being drilled for themselves, is being rigged up.

E. H. HUGHES DRILLING CO. and others have spudded in No. 1-A Looman, NE NE SE Section 9-20-4w, in the Brown pool of Garfield County, Oklahoma. This is a twin to a 5,735-foot dry hole drilled by a major company several years ago.

KERR-LYNN DRILLING CO. and others at No. 1 Olmstead, E half SE NW Section 12-14-3w, Oklahoma County, Oklahoma, drilled into the upper Simpson zone at 6,417 feet after going through the Hunton lime, topped at 6,055 feet, with no oil showing.

LOFFLAND BROTHERS have started two more operations on the

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north flank of the Thompson field, Fort Bend County, Texas, for H. M. Naylor No. 2 O. T. Musselman has been spudded, and No. 1 W. L. Moody is being rigged up. Additional locations have been made by Naylor in this area and more rotaries may be moved into the area in the near future.

HI-SPEED DRILLING CO. has staked No. 1 George A. Sala, SW SE NW Section 33-13-6, Lincoln County, Oklahoma, about 4 miles south of the Laffoon pool and 7 miles north of Prague, for a Wilcox sand test.

PARKER DRILLING CO., Tulsa, is putting down a deep test in the Deep Fox pool, Carter County, Oklahoma, for the Gulf Oil Corp. at No. 1 Empire, SE SE Section 27-2s-3w. It was cleaned to 8,037 feet; the hole was blown dry with gas; fluid amounting to 64 bbls., partly salt water, was blown from the hole. The well was shut down for orders.

HELMERICH & PAYNE, INC., Tulsa, at No. 1 Henderson, in NW quarter of Section 27-16-1e, in the Crews area of Logan County, Oklahoma, was drilling by stuck drill pipe recemented to a total depth of 5,030 feet. The whipstock was set at 3,850 feet. This drilling organization at No. 1 Johnson, in SE cor. of Section 2-15-1e, south of Meridian, in Logan County, Oklahoma, was drilling below 3,865 feet in the Checkerboard lime.

COOPER DRILLING CO., Shawnee, drilled a test at No. 1 Coughlin, in SE NE SW of Section 30-25-1e, in the Tonkawa sector of Kay County, Oklahoma, which was reported dry and abandoned at a total depth of 4,502 feet with the top of the Mississippi lime logged at 4,310 feet. This company at No. 1 Strawn, in SW quarter of Section 32-8-5e, St. Louis area, Oklahoma, was rigging up tools.

DELANEY-OSBORN DRILLING CO., Ada, Okla., is drilling below 4,382 feet in a well put down for J. Garfield Buell, Inc., known as No. 1 Madgett, located in SE SW SE Section 12-10-5e, North Earlsboro district of Seminole County, Oklahoma.

BIG CHIEF DRILLING CO., Oklahoma City, at No. 1 Green, in Section 29-7-5e, St. Louis pool, Oklahoma, has been drilling below 4,009 feet.

TABOR & COLEMAN, Tulsa, at No. 4 Miller, in NE NW SE of Section 29-7-5e, has been drilling below 3,336 feet.

NOBLE DRILLING CO., Tulsa, is drilling below 8,090 feet in dolomite at No. 1 Noble, which is being put down for the Pure Oil Co. in NE SE Section 35-3s-1e, northwest of Ardmore in Carter County, Oklahoma.

On the derrick floor of Al Buchanan rig No. 4 in the East White Point field, San Patricio County, Texas: B. F. Jackson (driller), Leonard Harvey, C. A. Hilger, J. F. Gayle and Campbell Stanfield

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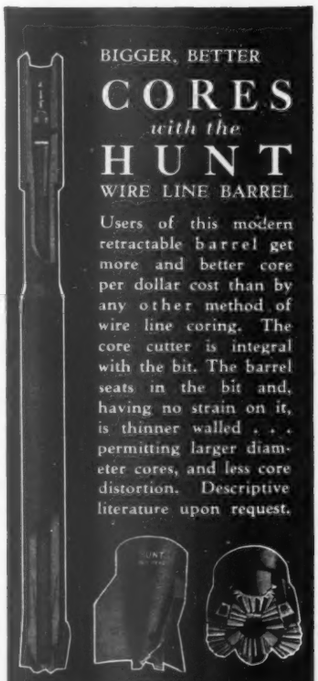

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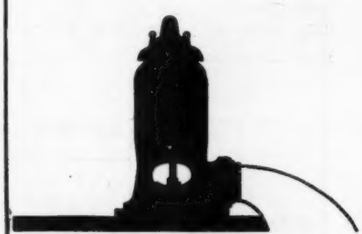

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By
NEIL WILLIAMS

Harris County, Texas, May Have Another Aldine Pool

HOUSTON, Tex., May 8.—The Aldine area, north of Houston in Harris County, was being added to the productive list of Texas Gulf Coast fields as Texas Gulf Producing Co. and others No. 1 H. S. Weary was cleaning out at the close of the week, flowing an estimated 3 bbls. of fluid per hour of which 10 per cent was oil and the balance wash water. Tubing pressure was 120 pounds and casing pressure 400 pounds. The well was drilled to a total depth of 7,664 feet, and is being tested through perforated casing at 6,824-34 feet. The sand section has been identified as the Eponides Yeguaensis formation.

Aldine has been looked upon as a favorable prospect for a number of years and several dry holes have been drilled in the area. The present test is located about 3½ miles north of the town of Aldine in Lot 52, Meadowbrook Farms subdivision in the E. Farias Survey. The area is divided into many ownerships and an active drilling campaign is anticipated.

In the newly opened Caplen field, located near the Gulf of Mexico in Galveston County, Sun Oil Co. No. 1 Hudnall, Zinn and Foreman, a northeast offset to the discovery well, is bottomed at 7,536 feet, and 7-inch casing was cemented on bottom, after sand, with thin shale streaks showing oil and gas, was cored in the discovery horizon at 7,376-7,415 feet. This well is checking slightly higher than the discovery well, and last week tested pipe line oil in a new horizon at 7,135-48 feet.

On the southeast flank of the Esperson dome, Liberty County, General Crude Oil Co. No. 2-B Esperson is bottomed at 7,350 feet, and casing is being cemented at approximately 7,100 feet, preparatory to testing a new sand at 6,955-7,035 feet, which showed oil and gas. The well is located in the Angus McNeil Survey, about 1,000 feet west of the company's No. 1-B Esperson, completed several weeks ago to open a new sand at approximately 7,300 feet.

In the same county and located in the Martha area, Stanolind Oil & Gas Co. has derrick up for No. 1 E. M. Flowers, located 466 feet from the south line and 1,410 feet from the east line of a 110-acre tract in the I.&G.N.R.R. Survey No. 7. The company controls a block of several thousand acres which has been worked extensively with geophysical instruments.

West Ranch Extension

The West Ranch field, Jackson County, was assured another quarter-mile west extension as Magnolia Petroleum Co. prepared to complete No. 10-A West. Sand showing oil was topped at 5,120 feet, and 7-inch casing was cemented at 7,127 feet after the hole was cored to 5,135 feet. Locations for two outpost wells are reported to have been made west and northwest of production by L. Glasscock and R. J. St. Germain. All wells drilled to date have been by Magnolia Petroleum Co.

In the same county and located in the Francitas field, Crosby Drilling Co. No. 1 Kopnicky, an east outpost, continues to have trouble with salt water intrusion. Casing was perforated in a new sand at 7,963-65 feet, and the well flowed 321 bbls. of fluid per day, of which 125 bbls. was oil and 187 bbls. salt water. The test was made through a 9/64-inch choke, with tubing pressure 1,400 pounds and casing pressure 2,300 pounds. South of production, Mills Bennett Production Co. No. 1 G. A. Lawrence is bottomed at 8,945 feet, and casing is being cemented on bottom preparatory to making a series of production tests at various horizons.

In Brazoria County, Crosby Drilling Co. No. 1 Wilson, in the Algoa area, squeezed off perforations and is now coring ahead in shale below 10,000 feet. This well drew considerable attention several weeks ago as a series of production tests were conducted at various intervals from 8,800 to 9,400 feet, each of which developed salt water with slight showings of gas.

Location for an interesting wildcat has been made in the College Point area, Matagorda County, by Continental Oil Co. on the S. Savage 263-acre lease in the Daniel Yearmans Survey. West of the town of Palacios, Sun Oil Co. No. 1 Cavallin, went dead after it had been completed for a distillate producer through perforated casing at 8,620-45 feet. The well was originally drilled to 9,582 feet and several production tests made at intervals from 9,300 up to 8,600 feet showed gas and salt water.

Sinclair Prairie Buys Into Block

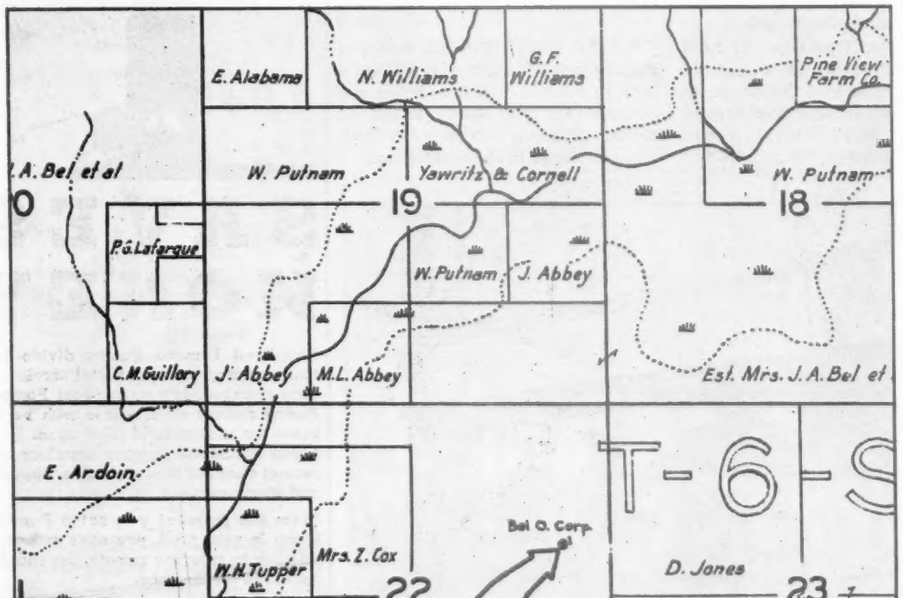
In the Goodrich area, San Jacinto and Polk counties, Sinclair Prairie Oil Co. is reported to have purchased a three-quarters interest in Jack Frazier's block of several thousand acres on which Frazier had started drilling on the first of two Wilcox tests. The company had previously purchased 2,500 acres of Frazier's 12,500-acre block, and took an option to buy the interest in the remaining acreage after working the area with geophysical instruments.

Locations for two more wildcats were made in Harris County. In the Cypress area, John Deering is moving in material for No. 1 Ridgeview Farms, a 6,500-foot test in the Duckworth Survey, while in the Mount Houston area, Jack Frazier is rigging up No. 3 Lena Griffith in the Whitney Britton Survey, Lot 6, Block 9, south and east of the same operator's No. 1 Griffith, a dry hole which logged an interesting showing in the Frio formation.

Louisiana Coast

On the South China prospect, Jefferson Davis Parish, Union Sulphur Co. No. 1 Tietje is drilling in shale below 8,407 feet. An electrical survey showed 2½ ohms and 150 millivolts at 8,055-80 feet. Reports that the well had logged an oil sand cannot be confirmed. Leasing in the area remains active.

Along the Louisiana Coast the North Elton prospect, Allen Parish, was the center of interest as preparations were made to test Bel Oil Corp. No. 1 Mrs. J. A. Bel which looms as a pool opener in view of the fact that seven possible oil and gas sands have been logged by an electrical survey. The hole was drilled to 9,010 feet, and 7-inch casing was cemented at 8,595 feet. An electrical survey and core analysis of the various sections showed the following results: Sand at 6,010-19 feet, 12½ ohms and 150 millivolts on the third curve; gas sand at 6,212-32 feet; sand showing oil and gas at 6,490-6,520 feet; sand showing oil at 6,919-35 feet which tested as high as 16 per cent saturation; sand showing gas at 7,272-7,327 feet; sand with 10 ohms on normal curve at 7,390-7,400 feet; sand showing gas at 7,555-85 feet, which recorded 22 ohms and 150 millivolts, and sand at 8,541-56 feet. The casing is expected to be perforated at 8,541-56 feet for the first test and if it fails the company will plug back and perforate the other sands. Geological markers released show the Discorbis topped at 5,615



Zingery Map Co., Houston

North Elton prospect, Allen Parish, Louisiana, showing location of Bel Oil Corp. No. 1 Mrs. J. A. Bel, in Section 22-6s-3w, now testing a series of oil and gas sands

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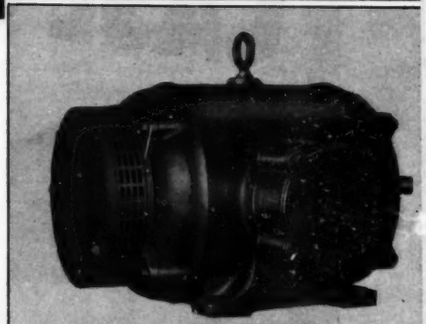

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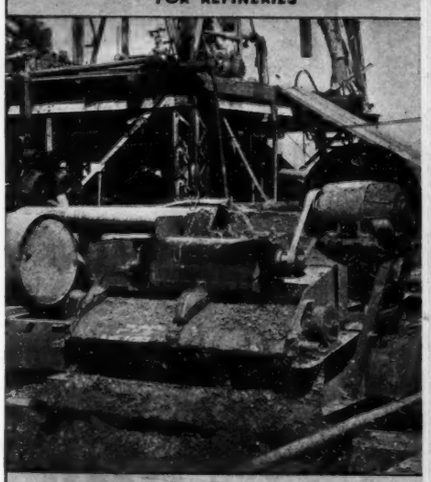

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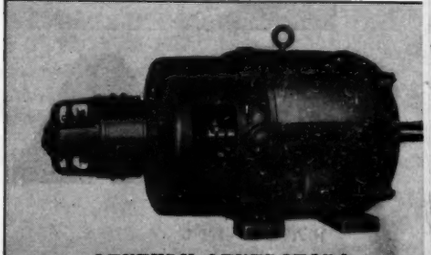

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feet, Heterostegina at 5,795 feet, Ortego at 6,910 feet and the Vicksburg at 8,619 feet. The well is located north of the town of Elton in Section 22-6s-3w, on the same general trend as the South Elton field, Jefferson Davis Parish, and Tepetate and North Tepetate fields in Acadia Parish.

In the Chalkley field, Cameron Parish, Shell Oil Co., Inc., was preparing to make a drill-stem test at No. 1-A Katherine Bel Hanzen which is bottomed in sand at 8,975 feet. The well is in Section 15-12s-6w, northeast of two producers drilled by Humble Oil & Refining Co.

Superior Oil Co. and others No. 1 State, Section 24-13s-4w, Grand Lake prospect, Cameron Parish, coastal Louisiana, perforated casing at 8,360-8,420 feet and is flowing at the rate of 350 bbls. of pipe line oil per day through a 14/64-inch choke under a tubing pressure of 1,250 pounds. The completion opens a new field on a block of several thousand acres which is held jointly with Pure Oil Co.

In La Fourche Parish, Gulf Oil Corp. No. 1 Grandison Land Co., Section 14-20s-23e, is running a protection string of 9⅝-inch casing, preparatory to drilling deeper from its present depth of 8,241 feet. An electrical survey and sidewall cores fail to show any oil or gas sands.

In the Lake Pontchartrain area, Orleans Parish, W. T. Burton is cementing 7⅝-inch casing in No. 1 I.&G.N.R.R. which is bottomed at 9,000 feet. It is reported that a showing of oil and gas was logged at the present depth, although the hole is expected to be carried deeper before a test is made of the section.

Locations for two more wildcats were made. In St. Tammany Parish, Honey Island Development Corp. spudded No. 1 W. C. Forbes, located in Section 33-7s-15e, while in Iberville Parish and about 6 miles east of the White Castle field, Housh and Thompson are moving in materials for No. 1 Kessler and Folse, Section 40-11s-13e.

The completion of Martex Petroleum Corp. No. 1 Falgout Holding Co. which is expected to open a new sand in the Golden Meadows field, La Fourche Parish, has been delayed by mechanical trouble. Seven-inch casing was cemented on bottom at 8,524 feet, and the casing was perforated at 8,163-75 feet. Tubing was dropped in the hole and the company is now trying to recover it.

In the Woodlawn field, Jefferson Davis Parish, Union Sulphur Co. opened production from a deeper sand with the completion of No. 1 O'Connor, Section 12-9s-6w. Seven-inch casing was cemented on bottom at 9,372 feet, and the well was completed through perforated casing at 9,296-9,300 feet. On a 24-hour gauge it flowed 142 bbls. of 32.6-gravity oil with 50 per cent salt water through a five-eighths inch choke.

Along the Sparta-Wilcox trend, in Pointe Coupee Parish, Falcon-Seaboard Oil Co. No. 1 J. H. Hobgood, Section 8-1s-7e, Pikes Peak area, is drilling in the Cane River formation below 6,786 feet. The Sparta formation was topped at 6,080-6,100 feet, and the first sand at 6,108-18 feet, carried no show of oil or gas. The well is reported to be checking high and is being watched closely as it nears the Wilcox section.

The first failure in the Eola field, Avoyelles Parish, looms as J. E. Jones No. 1 Haas Investment Co. is shut down at a total depth of 8,640 feet, after an electrical survey showed salt water in practically all of the Wilcox section, topped at 8,580 feet. The well is in Section 8-2s-3e, and defines the field to the southeast. Sid Richardson No. 4 Haas Investment Co., southwest of No. 3 Haas, is waiting on cement to set after recementing off a flow of salt water which appeared on the original completion test. The hole is bottomed at 8,624 feet, with slotted pipe cemented at 8,570 feet. The salt water is thought to be due to a bad cement job.

In the Cheneyville field, Rapides Parish, Sid Richardson No. 1 Weil Land Co., Inc., Section 55-1s-2e, was abandoned at 8,683 feet. This is the second Wilcox test drilled in the field and the section was found approximately 400 feet lower than the first well which was completed as a producer at approximately 6,200 feet.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Danbury field: Smith and McDannald No. 1 Haury, 3,500 feet, abandoned. Hastings field: Stanolind Oil & Gas Co. No. 4 McDonald, perforated casing 6,060-78 feet, 612 bbls., quarter-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 26 W. C. Tyrell, 7,080 feet, 328 bbls., three-sixteenths inch choke. Seabreeze field: Sun Oil Co. No. 1 Pipkin, 8,640 feet, abandoned.

Harris County

Bammel field: H. M. Harrell and others No. 1 Phipps, 6,188 feet, gas well. Fairbanks field: Amerada-Stanolind Oil & Gas Co. No. 6 Davis, perforated casing 6,842-45 feet, 69 bbls., 11 hours, eighth-inch choke. Amerada-Stanolind Oil & Gas Co. No. 12 E. W. Mills, perforated casing 6,848½-52½ feet, 244 bbls., eighth-inch choke. Amerada-Stanolind Oil & Gas Co. No. 8 White, perforated casing 6,839-43 feet, 106 bbls., eighth-inch choke. Amerada-Stanolind Oil & Gas Co. No. 12 White, perforated casing 6,839-43 feet, 156 bbls., eighth-inch choke. H. B. Ownby Drilling Co. No. 5 White, sand 6,838-54 feet, 85 bbls., eighth-inch choke. Sinclair Prairie Oil Co. No. 3 Goodykoontz, 6,836 feet, 151 bbls., eighth-inch choke. Friendswood field: Humble Oil & Refining Co. No. 19-B Humble-West fee, sand 6,031-44 feet, 476 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 20-B Humble-West fee, sand 5,537-6,045 feet, 470 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 1 Keller, sand 5,856-6,047 feet, 583 bbls., quarter-inch choke.

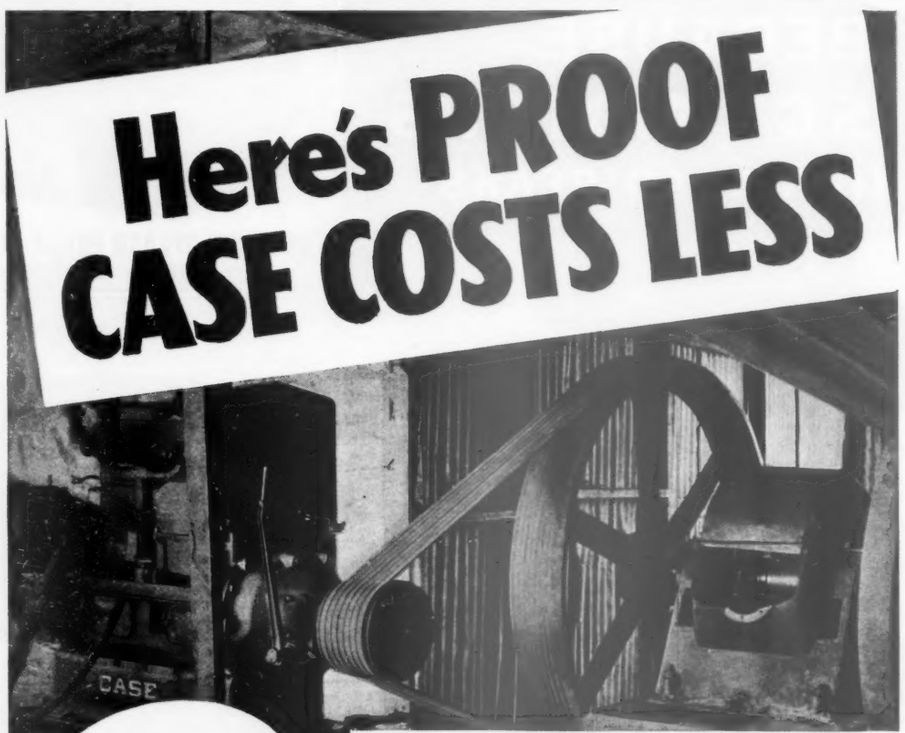
Jackson County

Cordelle field: Lewis Production Co. No. 8 Drushel, sand 2,697-2,720 feet, 166 bbls., three-sixteenths inch choke.

Liberty County

Hankamer field: Gulf Oil Corp. No. 28 Boyt, sand 2,950-66 feet, 105 bbls., pumping. Hardin field: Arkansas Fuel Oil Co. No. 1 Cessna, 7,686 feet, 441 bbls., quarter-inch choke. J. W. Frazier No. 2 Lynott and

(Continued on Page 129)



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Southwest Texas District

By F. L. SINGLETON

Four Pools in Two Weeks Is Jim Wells County's Record

CORPUS CHRISTI, Tex., May 8.—The opening of Jim Wells County's fourth field within the past two weeks, and the completion of a prolific producer from a new sand which marked up a major extension to the Richard King field, Nueces County, were the featured developments in Southwest Texas the past week.

Parr Drilling Co. No. 1 Hoffman, on the Springfield townsite, eastern Jim Wells County, perforated casing at 5,622-37 feet, and is cleaning out, flowing 1½ bbls. of 45-gravity oil per hour through a 5/64-inch choke under a tubing pressure of 370 pounds and shut-in casing pressure of 1,285 pounds. The well was drilled to a total depth of 5,806 feet, and casing cemented after an electrical survey and side-wall cores were taken of the sand section, which has been identified as the Vicksburg formation. The field is in the La Vaca grant and the area has been named "Camada."

F. A. Gillespie & Sons No. 1 Shear, discovery well of the Magnolia City field, 7½ miles south of Alice, flowed 108 bbls. of 43.8-gravity oil per day on a potential test made through an eighth-inch choke. Tubing pressure was 1,500 pounds and casing pressure 2,025 pounds. This well was completed the previous week in the Vicksburg sand at 5,439-46 feet.

Approximately 3½ miles north of the above area, and about 1 mile south of the Clark distillate area, Gravis & Doran No. 1 Lillian Mull flowed 161 bbls. of 42-gravity oil per day through a 9/64-inch choke under a tubing pressure of 900 pounds and casing pressure of 1,325 pounds. Production is from the Vicksburg sand at 5,325-30 feet. The completion opens the way for an active drilling campaign. Drilling already has been started on two wells by Frank Gravis and G. L. Ramsey, both on the O. L. Richardson lease in the J. Poitevent Survey, and several other locations are expected to be announced next week.

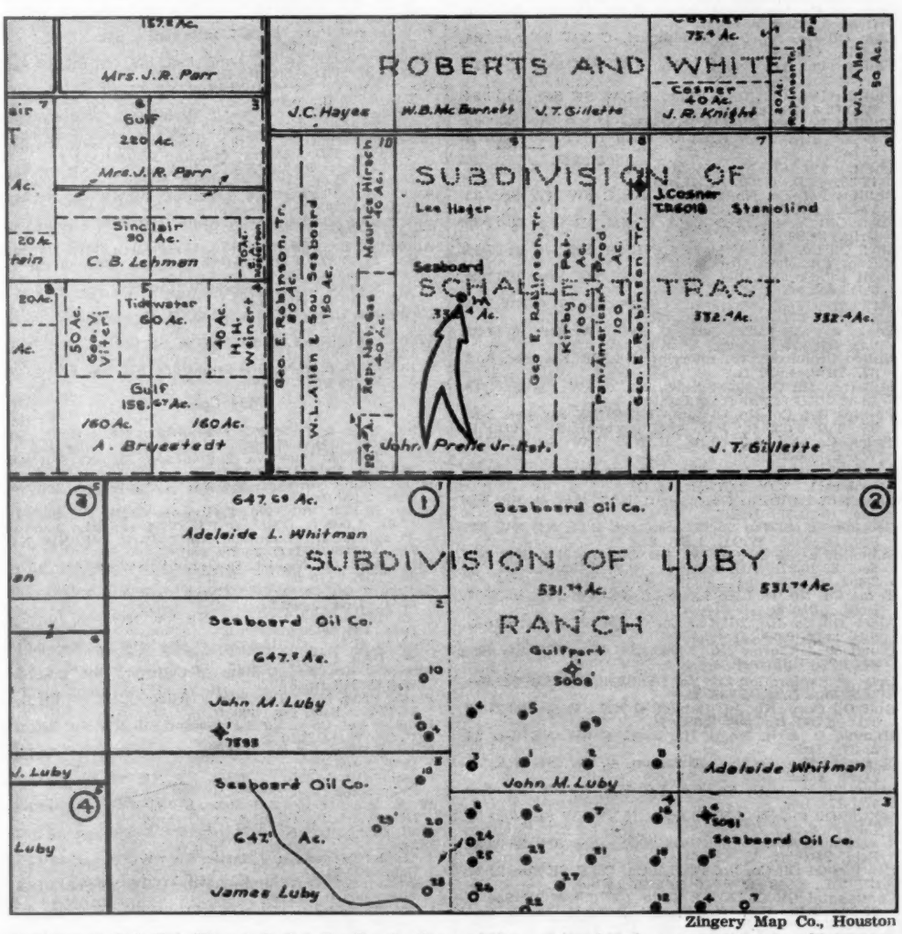
Another Jim Wells Prospect

Texas Gulf Producing Co. No. 1 Garza, another prospective pool opener for Jim Wells County, southwest of Alice in the La Tinaja de Lara grant, is waiting for orders after an unsuccessful production test was made through perforated casing at 6,485-6,530 feet. The hole was swabbed down to 5,000 feet, and the well flowed by heads for approximately 35 minutes and then went dead. At the time of the first head the working pressure built up to 200 pounds and at the end of 35 minutes the pressure dropped to zero. Additional perforations are expected to be made in the sand section which has been identified as the Yegua.

Another wildcat being watched with much interest is Bridwell Oil Co. No. 1 Smith, near the town of Ben Bolt, which is drilling at 3,800 feet. In the newly opened South Alfred field, Lewis Production Co. has started drilling No. 1 Robert Adams, in the Robert Adams Survey. This is the third test in the area since the completion of the discovery well.

Southern Minerals Corp. No. 1-A King, about 1½ miles south of the Richard King field, Nueces County, flowed 671 bbls. of 39-gravity oil daily through a quarter-inch choke under a tubing pressure of 1,200 pounds and casing pressure of 2,075 pounds. The completion was made in a new sand at 5,399-5,406 feet. The main production in the field proper is found at approximately 4,000 feet.

In the same county, north of the Luby field, Seaboard Oil Co. No. 1 John La Prelle is drilling below 6,800 feet, and the hole will be carried to a contract depth of 7,000 feet before casing is cemented for a production test of the 4,300-foot horizon. A 15-minute drill-stem test at 4,347-61 feet, developed 630 feet of 49-gravity oil, which practically assures the opening of a new pool.



Zingery Map Co., Houston

Seaboard Oil Co. No. 1-A La Prelle (indicated by arrow), a prospective pool opener, north of the Luby field, Nueces County

Blowout at White Point

In the East White Point field, San Patricio County, Nueces Royalty Co. No. 1 Roper-Kellam blew out from an approximate depth of 1,000 feet and cratered. Development of the field continues at a steady pace as two new oil wells were completed and three other wells were in the process of completion. The completions were made by Sinclair Prairie Oil Co. and Houston Oil Co. on the Womack and Baldwin leases. Plymouth Oil Co. cemented casing in No. 3 Solar-Ficke and No. 2-B Cole; Sinclair Prairie No. 4 Womack was testing oil sand at 5,606-67 feet; R. A. Welsh No. 3 fee was testing through perforated casing at 5,638-77 feet, and Humble Oil & Refining Co. No. 2 Countis was testing through perforated casing at 5,658-70 feet.

In the north Samfordyce area, Hidalgo County, Fohs Oil Co. No. 1 Sheldon has been completed in a new horizon at 3,422-27 feet for an initial production of 15 bbls. of 25.6-gravity oil, flowing through a 10/64-inch choke under a working pressure of 1,460 pounds.

Southeast of the Longhorn field, Duval County, Frank Gravis No. 2 Parr, reperforated casing at 5,952-58 feet and is reported to be swabbing oil with no showing of salt water. The well is in the San Andres grant, about 2 miles from the field. Ten miles north of San Diego, location for another Pettus sand test was made by William M. Nicholls for No. 1 J. T. Graham in the Cuadrilla Irrigation Survey No. 572.

One-half mile west of the Killam field, Webb County, Rodney De Lange and others No. 1 F. C. Garcia tested 4,000,000 cu. ft. of dry gas through perforated casing at 1,974-82 feet, and the well has been killed to retest. Location is in the S.M.&S. Survey No. 337.

In Willacy County, 3½ miles west of Lyford, Midwest Royalty Co. No. 1 Dayton, a projected 9,000-foot test, has been spudded. The well is located in the San Juan De Carriutas; San Matias subdivision of Share No. 47, Lot 8.

Humble Oil & Refining Co. No. 1 Fox, a wildcat in Bee County, has been abandoned at 5,512 feet, and the rig is being moved to Refugio County for No. 3 Thomas, a wildcat located in the Patrick Downey Survey.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Aransas-San Patricio Counties

McCampbell field: Paul Benedum and others No. 1 Bell, perforated casing 7,117-22 feet, 88 bbls., eighth-inch choke. Brauer and others No. 4 fee, perforated casing at 7,137-40 feet, 78 bbls. on eighth-inch choke.

(Continued on Page 114)

Rocky Mountain Area

By
T. R. INGRAM

Wildcats in Two Counties in Colorado Showing Favorably

DENVER, Colo., May 8.—Two Colorado wildcats have important showings just above the objective sands in the MacKinnie Oil & Drilling Co. No. 1 Coles, in Moffat County, and South Park Oil Co. No. 1 Lemar, in Park County. Twenty-one refiners in seven states submitted quotations to Colorado State Highway Department for road-oil requirements for 1939.

Wyoming had two new operations and one dry hole. The Whedon well, which promised an extension of the Osage pool, was abandoned. Sinclair-Wyoming Oil Co. No. 2-A Mahoney Unit, flowed 80 bbls. from the Tensleep while cleaning and testing. Basal Sundance sand was dry in 44 feet of sand drilled in the General Petroleum Corp. test on Cole Creek.

Cut Bank in Montana had four completions and four new operations. Best well was Glacier Production Co. No. 3 Miller, which swabbed 294 bbls. first 24 hours. Kevin-Sunburst reported one average completion and one new operation.

NEW MEXICO

Ten oil producers and one failure were listed as completions in southeastern New Mexico the past week. None were of exceptional size. Ten of the producers were in Lea County, one in Eddy County. The Lea County completions were:

Magnolia Petroleum Co. No. 2-P State, C SE SE Section 22-17s-35e, Vacuum field, flowed 70 bbls. of oil in three hours through 2½-inch tubing set at 4,639 feet. Pay was found at 4,380 feet and the well was bottomed at 4,640 feet.

Same company's No. 27 State-Bridges, C SE NE Section 26-17s-34e, found pay at 4,330 feet, total depth 4,727 feet, and flowed 58 bbls. of oil in three hours through open tubing.

Twin Oil Corp. No. 1-D State, C SW NE Section 30-17s-35e, pumped 5 bbls. of oil daily from pay topped at 4,555 feet. Total depth was 4,700 feet.

Magnolia Petroleum Co. No. 30 State-Bridges, C SW NE Section 26-17s-34e, topped pay at 4,430 feet, total depth 4,740 feet, and flowed 15 bbls. of oil an hour.

Gulf Oil Corp. No. 2-B Mattern, C SE NE Section 31-21s-37e, Hardy area, pumped 55 bbls. of oil in 24 hours after setting 2-inch tubing at 3,796 feet. Top of pay was 3,780 feet and the well was bottomed at 3,806 feet.

Repollo Oil Co. No. 1-D State, Lease 157, NW NW SW Section 12-22s-36e, South Eunice, flowed 656 bbls. of oil in 24 hours through three-quarters inch choke. Pay formation was found at 3,710-85 feet, total depth 3,785 feet.

Kan-Mex Oil Co. No. 3-B Vaughn, C SW NW Section 3-24s-36e, Rhodes area, had pay at 3,575 feet, total depth 3,620 feet, and flowed 64 bbls. of oil an hour naturally in a two-hour test.

Sam Weiner No. 3 Smith, C N half NE SE Section 4-25s-37e, Langlie pool, was bottomed at 3,506 feet in sand and flowed 150 bbls. of oil and bottom-hole water in 24 hours. Top of pay was 3,445 feet.

Italo Petroleum Corp. No. 1 Carlson, SW NE NW Section 26-25s-37e, found pay at 3,263 feet, was shot and flowed 4 bbls. of oil in 24 hours. Total depth was 3,341 feet.

In Eddy County, Repollo Oil Co. No. 5-A Parke, NW NE NW Section 22-17s-30e, set 2-inch tubing at 3,294 feet and swabbed and flowed 25 bbls. of oil daily. After acidizing it swabbed 38 bbls. in four hours. Top of pay was 3,220 feet, total depth 3,412 feet.

Hammon & Sons No. 1 Ployhar-State, SW SW SE Section 16-17s-28e, Eddy County, was bottomed in sand at 1,971 feet, plugged back to 1,825 feet and was dry and abandoned.

Lea County

Carper-Taylor No. 1 Taylor (wildcat), SW SW SW Sec. 30-16-32. T.D. 4,097 ft.; C.O. 3,870 ft.; shot 3,875-3,955 ft.

Magnolia Pet. Co. No. 1-Q State, C SW NE Sec. 36-16-36. Drlg. 3,310 ft.

Magnolia Pet. Co. No. 1-S State, C NE SW Sec. 34-16-34. Drlg. 3,030 ft.

Repollo Oil Co. No. 2 State, Lse. 182, C S½ NE SW Sec. 31-16-37. T.D. 4,108 ft.; blowing est. 50,000,000 cu. ft.

Skelly Oil Co. No. 1-O State, C E½ SW SW Sec. 31-16-37. T.D. 3,000 ft.; rng. 9-in.

Carper Drlg. No. 1 Simon, C NE NE Sec. 29-17-32. Drlg. 3,198 ft.

Cities Service No. 2-K State, C SE NE Sec. 27-17-35. Drlg. 4,596 ft.

Continental Oil Co. No. 1-A Sanderson B-14, C N½ NW NW Sec. 14-20-36. W.O.C. 1,443 ft.

Continental Oil Co. No. 6 State H-35, C NE NW Sec. 35-17-34. Drlg. 4,201 ft.

Drlg. & Exploration No. 1-M State, C SW SE Sec. 29-17-35. Drlg. 4,650 ft.

Drlg. & Exploration No. 1-W State, NW NW SE Sec. 26-17-35. T.D. 4,260 ft.; W.O. csg.

Humble O. & R. Co. No. 5-K State, C SE NE Sec. 32-17-35. Drlg. 4,137 ft.

Magnolia Pet. Co. No. 1-R State, C NW SE Sec. 1-17-36. S.O. 3,274 ft.; drlg. 3,715 ft.

Magnolia Pet. Co. No. 1 Selby, C NW NE Sec. 7-17-37. Drlg. 4,610 ft.

Magnolia Pet. Co. No. 31 State-Bridges, C NE NW Sec. 23-17-34. Drlg. 2,865 ft.

Magnolia Pet. Co. No. 32 State-Bridges, C NE NW Sec. 25-17-34. Drlg.

Magnolia Pet. Co. No. 33 State-Bridges, C NW SE Sec. 26-17-34. R.U.R.

Maljamar O. & G. Co. No. 2-B Baish, C NE NE Sec. 27-17-32. S.D. rprs. 3,602 ft.

Maljamar O. & G. Co. No. 2 Mitchell, SW SE SW Sec. 5-17-32. T.D. 3,251 ft; 2,500 ft. W.I.H.

Ohio Oil Co. No. 2 State-Warn, C SE NW Sec. 33-17-35. Drlg. 3,395 ft.

Ohio Oil Co. No. 2 State-Shugart, C NW SE Sec. 34-17-34. C.&P.

Phillips Pet. Co. No. 4 Hale, C SE SW Sec. 35-17-34. Loc.

Phillips Pet. Co. No. 5 Hale, C NW SE Sec. 35-17-34. W.O.C. 4,110 ft.

Phillips Pet. Co. No. 12 Santa Fe, C NE SW Sec. 28-17-35. T.D. 4,700 ft.; C.O. 4,350 ft.; P. 45 B.O. in 8 hrs.

Phillips Pet. Co. No. 15 Santa Fe, C NE NE Sec. 28-17-35. T.D. 4,700 ft.; S.D.O.

Phillips Pet. Co. No. 29 Santa Fe, C SW NW Sec. 33-17-35. W.O.C. 4,127 ft.

Shell Oil Co. No. 1-T State, C NE SE Sec. 33-17-35. Drlg. 3,990 ft.

Shell Oil Co. No. 1-V State, C NE NE SE Sec. 21-17-35. Rng. tbg. 4,680 ft.

Shell Oil Co. No. 2-N State, C SE NE Sec. 28-17-35. T.D. 4,250 ft.; W.O.C.

Standard Oil of Texas No. 3 State, Lse. 5, C SW NW Sec. 27-17-35. Drlg. 3,395 ft.

Texas Co. No. 3-N State, C SW NW Sec. 30-17-35. S.O. 4,534-72 ft.; drlg. 4,638 ft.

United Producers No. 1 Caylor, NE NE NW Sec. 6-17-37. Drlg. 4,030 ft.

Fullerton Oil Co. No. 1-A Walker, C SW NW Sec. 18-18-32. T.D. 4,225 ft.; S.D.O.

Phillips Pet. Co. No. 16 Santa Fe, C NW SW Sec. 5-18-35. T.D. 5,030 ft.; P.B. 4,157 ft.; acid.; S. 1 B.O.P.H.

Texas Co. No. 1-Z State, C NW NW Sec. 2-18-34. W.O.C. 1,620 ft.

P. B. English No. 1 Miller, C NE SE Sec. 18-19-32 (wildcat). T.D. 3,077 ft.; S.D.

Continental Oil Co. No. 6 Britt B-15, C W½ SE NW Sec. 15-20-37. Drlg.

Continental Oil Co. No. 5 Sanderson B-14, NE NW SW Sec. 14-20-36. W.O.C. 1,301 ft.

Stanolind O. & G. Co. No. 4-B Gilluby, NW NW NW Sec. 22-20-37. T.D. 3,310 ft.; P.B. 2,403 ft.; D.D. to 2,492 ft.

Texas Co. No. 18 Lieu Lands, C NE NW Sec. 19-20-37. Drlg. 2,010 ft.

Aloco Oil Co. No. 2-B Carson, C NW SE Sec. 28-21-37. S.D. rprs. 2,600 ft.

Danglade & Clower No. 2 Owen, C W½ NW SW Sec. 34-21-37. R.U. mch.

Drlg. & Exploration Co. No. 1-D Shell, SW SW SE Sec. 36-21-36. Drlg. 2,858 ft.

Gulf Oil Corp. No. 1-C Carson, C NE NE Sec. 33-21-37. T.D. 3,760 ft.; pay 3,685 ft.

Humble O. & R. No. 1 Hardison, C SW NE Sec. 34-21-37. Drlg.

Magnolia Pet. Co. No. 5 Carson, C SW NE Sec. 33-21-37. C.&P.

Stanolind O. & G. Co. No. 5-C Hill, C NW NE Sec. 5-21-37. Loc.

Wilson Oil Co. No. 1 Shell-State, C NE SW Sec. 7-21-35. Loc.

J. C. Clower No. 1 Christmas, SE SE SW Sec. 28-22-37. Drlg. 2,910 ft.

Continental Oil Co. No. 1-A Elliott, C SE SE Sec. 21-22-37. T.D. 3,648 ft.; S. 45 B.O. in 24 hrs.

Continental Oil Co. No. 6 State J-2, C SW SE Sec. 2-22-36. T.D. 3,810 ft.; F. 294 B.O.P.H. for 2 hrs.; 5,890,000 cu. ft. gas.

Gulf Oil Corp. No. 4-E Mattern, C SW SW Sec. 1-22-36. T.D. 3,790 ft.; blew out; F. 25 B.O.P.H.

Gulf Oil Corp. No. 5-E Mattern, SW SW NW Sec. 12-22-36. B. drk.

Lem Peters No. 2 Call, C W half NW SW Sec. 26-22-37. Drlg. 2,400 ft.

Lem Peters No. 3 T. O. May, SW SW NE Sec. 34-22-37. C.&P.

Shell Oil Co. No. 1 T. O. May, NW NW NW Sec. 35-22-37. T.D. 3,622 ft.; B. 20 gal. O.P.H.

Skelly Oil Co. No. 2-A Baker, SW SW NW Sec. 26-22-37. Drlg. 2,595 ft.

Skelly Oil Co. No. 8 Baker, SW NE NE Sec. 27-22-37. Drlg. 1,250 ft.

Texas Co. No. 2-B Fally, C SE SW Sec. 8-22-37. T.D. 3,720 ft.; P.B. 3,694 ft.; shot and C.O.

Texas Pacific C. & O. No. 15-A State, C N½ SE NW Sec. 11-22-36. T.D. 3,839 ft.; S.I.

Continental Oil Co. No. 1 Lynn A-28, C SW NE Sec. 28-23-36. T.D. 3,576 ft.; S.G., no oil.

Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; tstg.

Skelly Oil Co. No. 4 Simms, SW NE SE Sec. 3-23-37. Drlg. 1,225 ft.

Anderson & Prichard No. 1-A State, C SW NW Sec. 32-24-37. W.O.C. 3,414 ft.

Amerada Oil Co. No. 2 Johnson, C SW SW Sec. 27-24-37. Drlg. 2,995 ft.

Continental Oil Co. No. 3 Jack B-27, C NW SE Sec. 27-24-37. Drlg. 870 ft.

Humble O. & R. Co. No. 1-L State, C NE SE Sec. 32-24-37. T.D. 3,560 ft.; to P.B.

Humble O. & R. No. 2-L State, C SE NE Sec. 32-24-37. C.&P.

Kan-Mex Oil Co. No. 4 Vaughn, C SE NE Sec. 3-24-36. Drlg. 415 ft.

Montecito Corp. No. 2 Woolworth, NE SW SW Sec. 33-24-37. C.&P.

North Shore Oil Corp. No. 3 Woolworth, SW SW NW Sec. 33-24-37. T.D. 3,576 ft.; C.O. to bttm. and S.I.

North Shore Oil Corp. No. 4 Woolworth, SE NW NW Sec. 33-24-37. Drlg. 1,775 ft.

Parker Drlg. Co. No. 3 Erwin, C W½ NE SW Sec. 35-24-37. T.D. 3,460 ft.; F. 10 B.O. in 8 hrs.; est. 3,000,000 cu. ft. gas.

Phillips and Pure No. 7 Woolworth, C SW NE Sec. 33-24-37. Drlg. 2,000 ft.

Repollo Oil Co. No. 2-C State, Lse. 157, NE SE SE Sec. 32-24-37. T.D. 3,565 ft.; S. 21 B.O.

Repollo Oil Co. No. 4-B Whitten, NE NE SE Sec. 4-24-36. T.D. 3,709 ft.; swbg.

Schermerhorn Oil Co. No. 5 Woolworth, NW SW NE Sec. 28-24-37. T.D. 3,546 ft.; drlg. by tools at 3,500 ft.

Schermerhorn Oil Co. No. 6 Woolworth, C SW SE Sec. 28-24-37. T.D. 3,550 ft.; shot and F. 94 B.O.P.H.

Schermerhorn Oil Co. No. 7 Woolworth, C SE SE Sec. 28-24-37. Loc.

Anderson & Prichard No. 6 Wells, C SW NW Sec. 5-25-37. W.O.C. 1,200 ft.

Anderson & Prichard No. 7 Wells, C NW SW Sec. 4-25-37. Drlg. 3,150 ft.

Anderson & Prichard No. 1 Woolworth, NW NE NE Sec. 17-25-37. T.D. 3,454 ft.; gauged 8,400,000 cu. ft. gas and spray oil.

Cities Service No. 2 Dabbs, SW SW NW Sec. 23-25-37. T.D. 3,240 ft.; rng. csg.

Richmond Drlg. No. 3-A State, C SE SW Sec. 2-25-37. Drlg. 1,455 ft.

Weiner et al No. 4 Smith, NW SE SE Sec. 4-25-37. Drlg. 1,250 ft.

Stanolind O. & G. No. 1-B Gregory, C SW NW Sec. 15-26-37. M. on grd.

Eddy County

Allen, Fair & Pope No. 1 Snowden, SE NE SE Sec. 36-17-29. T.D. 2,775 ft.; pay 2,740-60 ft.; cmtg. csg.

Allen, Fair & Pope No. 2 Snowden, SE SW SW Sec. 36-17-29. Drlg. 150 ft.

B. L. Arnold No. 1 Arnold, NW NW NW Sec. 34-17-30. Drlg. 2,855 ft.

Aston & Fair, Inc., No. 1 Hudson, C NE NE Sec. 18-17-31. 1,000 ft. O.I.H. at T.D. 3,299 ft.; drlg. 3,300 ft.

J. O. and J. H. Hammond No. 1 Paris, NE NW NW Sec. 5-17-29. S.D.O. 25 ft.; abd.

Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. T.D. 4,170 ft.

Grayberg Oil Co. No. 12 Burch, NW NW SE Sec. 19-17-30. Drlg. 2,300 ft.

J. E. Hughes No. 2 Brooks, NE NW NW Sec. 19-17-28. Drlg. 465 ft.

Nash et al No. 9-A Jackson, C N½ NW NE Sec. 24-17-30. Drlg. 1,840 ft.

Ohio Oil Co. No. 4 State McCallister, Sec. 25-17-34. W.O.C. 510 ft.

Plains Prod. No. 1 Daugherty (wildcat), SE SE SE Sec. 11-17-27. Rng. csg. 300 ft.

Premier Pet. Corp. No. 1-F Beeson, SW NW SW Sec. 31-17-30. W.O.C. 540 ft.

Repollo Oil Co. No. 4-A Keel, SE NE SW Sec. 7-17-31. Drlg. 3,408 ft.

Repollo Oil Co. No. 3 West, NE NE NE Sec. 3-17-31. Drlg. 3,385 ft.

W. K. Royalty No. 3-B State, C NE NW Sec. 16-17-31. Drlg. 1,845 ft.

H. T. Clark et al No. 1 Massie, C SW SW Sec. 27-18-29. Loc.

J. H. Steinberger No. 2 Hastie, SW SW SW Sec. 18-17-28. Drlg. 400 ft.

Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. T.D. 2,002 ft.; S.D.O.

L. E. Elliott No. 1 Elliott, SE SE SE Sec. 24-18-29. T.D. 120 ft.; R.U.

Etz & Cone No. 1 Nelson, SE SE NE Sec. 10-18-30. Drlg. 1,925 ft.

Farmer & Tallmadge No. 1 Hubbell, NE SW Sec. 4-18-25. Drlg. 220 ft.

Franklin Pet. Corp. No. 1 Canfield, NW NW NW Sec. 7-18-30. M.I.M.
Franklin Pet. Corp. No. 1 Cappedge, NW SW NW Sec. 5-18-30. Drlg. 2,731 ft.
Green Bay-Paton No. 1 Erwin, C SW SW Sec. 9-18-31. W.O.C. 803 ft.
Harvey E. Yates No. 1 Travis, NE SE SE Sec. 6-18-29. T.D. 2,606 ft.; C.O.
C. L. Jones No. 1 Brainard, NW SW NW Sec. 1-18-27. O.I.H.; T.D. 481 ft.
H. W. Martin No. 1 Gates, SE SE SW Sec. 15-18-30. H.F.W.; drlg. 960 ft.
Plains Prod. No. 1 Swearingen, C NW NE Sec. 14-18-31. Drlg. 1,595 ft.
G. V. Price No. 2 Massie, SE SE NW Sec. 22-18-29. R.U. mch.
Martin Yates No. 1 Saunders, NE NE NE Sec. 12-18-29. Drlg. 2,645 ft.
Rhodes Drlg. No. 2 Swearingen, C NE NE Sec. 14-18-31. Drlg.
Texwell Corp. No. 1 Sullivan, C SE SW Sec. 23-18-31. S.D. rprs. 610 ft.
Carper Drlg. Co. No. 1 Quillen, C NW NE Sec. 12-19-31. S.D.O. 2,765 ft.
Me-Tex Supply Co. No. 1 State, NW NW NW Sec. 2-19-31. R.U. mch.
R. C. Underwood No. 1 Quillen-Bruce, NE NE SE Sec. 4-19-31. Drlg. 3,675 ft.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. T.D. 1,180 ft.; est. 25-40 B.O.P.D.; tstg.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. Drlg. 645 ft. (last report).
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,978 ft.; S.D.O.
Barnett Oil Dev. Co. No. 1 King, C NW SE Sec. 23-26-30. Drlg. 3,745 ft.

Chaves County

Mac T. Anderson No. 1 Warnock, C SW SE Sec. 17-15-27. Drlg. 1,041 ft.
R. M. Baker No. 1 Baker, NW NW NW Sec. 19-10-30. C.&P.
Comanche Drlg. No. 1 Campbell, NE NE NW Sec. 15-11-26. Drlg. 675 ft.
Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 3,445 ft.; to P.B.
New, Russell & Wood No. 1 Sterrett (wildcat), NW SE NW Sec. 29-11-25. T.D. 815 ft.; rng. csg.
Tarkenton Bros. No. 1 Peters, SE SE NW Sec. 33-11-25. Drlg. 900 ft.
Western Minerals, Inc., No. 1 Dow (wildcat), C SW NW Sec. 27-10-30. Spdg.

De Baca County

N. E. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 620 ft.; S.D. rprs.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 680 ft.; S.D.O.

Luna County

O. D. Berry No. 1 Berry, SE SE SW Sec. 33-22s-10w. Drlg. 300 ft.

Roosevelt County

Shell Oil Co. No 1 Harwood, C S½ SE SE Sec. 27-7s-35e T.D. 7,957 ft.; Schlumberger stk. at 7,300 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarita, Sec. 22-9n-1e. Landed csg. on bttm. at 1,100 ft.; drlg. ahead.

San Miguel County

Ben E. Keith No. 1 McCune, SW SE SW Sec. 32-16n-12e. T.D. 10 ft.; ran 1 jnt. 10-in.
Southwest Drlg. Co. No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 1,600 ft.; fsg.

San Juan County

The Continental Oil Co. No. 89 Rattlesnake, SE NE NE Section 2-29n-19w, Rattlesnake pool, was completed in the Dakota at 783-839 feet for 34 bbls. per day.

Continental Oil Co. No. 90 Rattlesnake, CWL SW NW Sec. 1-29n-19w. Drlg. 195 ft.; 8⅝-in. at 23 ft. (first report).
Al Greer No. 2 Thompson, SW SE SW Sec. 10-30n-11w. Drlg. 1,055 ft.
Geo. Goodrun No. 1, NE NW NW Sec. 16-30n-11w. Drlg. 600 ft.; S. sour gas.

Torrance County

Drice Co. No. 1 Garland, NE SE Sec. 32-7n-7e. Drlg. 1,802 ft.

Valencia County

C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. Drlg. 1,600 ft.
Joiner Oil Corp. No. 1 San Clement, C NE SE Sec. 23-7n-1e. T.D. 5,606 ft.; fsg. 700 ft. D.P.

COLORADO

Twenty-one companies operating refineries in seven states submitted bids for road oil for use of the Colorado Highway Department during 1939. The bids were accepted as quotations from which purchases will be made as required during the year. Prices are f.o.b. refinery, and freight rates from the plant to the location of the job will be a factor in determining which company will receive the contract for that specific job.

Boulder County

Reynolds & Rohr No. 1 Thomas, SW SW Sec. 17-1n-70w. S.D.O. 2,138 ft.; will D.D. under management of Reynolds.

Fremont County

Waterville Oil Co. No. 1 Persons, CWL NE NE Sec. 17-18s-69w. Drlg. 90 ft. after setting 52 ft. of 10-in.
Isadore Spangler No. 1 St. Marys, SE SE SE Sec. 2-19s-70w. T.D. 2,235 ft. (C.D.); S.G. 2,120 ft.; S.O. 2,230 ft.; prep. to pump.

La Plata County

Nick Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. T.D. 2,352 ft.; fsg. for 8¼-in. parted at 630 ft.

Moffat County

The MacKinnie Oil & Drilling Co. and Morapas Petroleum Co. No. 1 Coles test on the north flank of the Thornburg (Morapas) anticline is at an interesting stage and gives considerable promise of opening a new oil pool. Water in the Dakota sand at 2,872-3,017 feet was shut off with the 6¼-inch cemented at 3,293 feet with 60 sacks. A strong flow of gas with a showing of oil made their way through 2,700 feet of water before the pipe was cemented. The hole is on top of the so-called Morrison sand of the nearby Iles field, an upper member of the Twin Creek formation, approximately 170 feet above the Nuggett (Sundance) sand, the original objective for the test. Officials of both companies are at the well today watching for results when plug is drilled.

C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 1,164 ft.; res. after winter S.D.; U.R. 8¼-in. for F.S.O.
MacKinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. Cmtd. 6¼-in. at 3,293 ft.; drlg. plug.

Park County

The South Park Oil Co. No. 1 Lemar, on the South dome on the Hartsel anticline, topped the Apache Creek zone at approximately 6,956 feet with a good show of free oil and looks promising for a pool opener. It is not yet in the main sand, but expects that horizon in the next 50 to 75 feet. The present showing is in thin streaks of sand and shale. The zone is approximately 200 feet thicker at the outcrops and consists of sand, shale and shale breaks. The test has had several shows of oil and gas in upper formations, but has not encountered any water at any level. The Apache Creek sand, named by H. W. C. Prommel after a sand encountered at Badito-Alamo, is in the Pierre, below the basal Hygiene and is composed of older beds than the formation last named. Coring ahead is in progress and President Kramer and C. E. Shoenfelt, petroleum engineer, have gone to the well.

South Park Oil No. 1 Leman, NE NE SE Sec. 34-11s-75w. Cg. below 6,956 ft.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek Ld. & Cattle, SW SE Sec. 29-19s-64w. S.D. 2,064 ft.

Rio Blanco County

Texas Co.-California Co. No. 2 Unit, NW SE SW Sec. 27-3n-94w. M.I.M.
Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. T.D. 3,645 ft.; M.I. 6¼-in. to res.

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WYOMING

Big Horn County

Yale Pet. Corp. No. 2 Yates, Lot 57 (NW SW) Sec. 34-56n-97w. Drlg. L. 3,404 ft.; top Tensleep 3,294 ft.
Mule Creek Oil Co. No. 1 Sessions, Lot 53 (NW NW) Sec. 34-56n-97w. T.D. 3,342 ft.; fsg. stuck D.P.
Libby-Keoughan No. 1 Sheets, SE NE SE Sec. 9-55n-96w. T.D. 3,440 ft.; C.O. 200 ft. off bttm.
A. L. Rankin No. 1 Karjala-Rankin, C SW NW Sec. 10-54n-94w. Drlg. Amsden 755 ft.

Carbon County

The Sinclair-Wyoming Oil Co. No. 2-A Mahoney Unit, on the Mahoney dome, is a near completion in the Tensleep at 4,507 feet. It flowed 80 bbls. through the tubing and is expected to improve with cleaning out. The 7-in. was cemented at 4,288 feet. It is an east offset to No. 3 Mahoney, completed last fall for 172 bbls. per day.

Sinclair-Wyoming has made a location for its No. 13 on the Wertz dome in the NE NW NW Section 7-26n-89w, a north offset to its No. 12-B Wertz, which was completed early in 1937 for 594 bbls. in 19 hours from the Tensleep.

Sinclair-Wyoming Oil Co. No. 13 Wertz, NE NW NW Sec. 7-26n-89w. B.R. (first report).
Sinclair-Wyoming Oil Co. No. 2-A Mahoney Unit, C SW NE Sec. 34-26n-88w. T.D. 4,507 ft. in Tensleep; cmtd. 7-in. at 4,288 ft.; tbg. at 4,505 ft.; tstg.
Producers Oil Co. No. 1 Lake Valley, CNL Sec. 14-20n-88w. S.D. 2,016 ft. for 10-in.

Converse County

Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. Drlg. 2,525 ft.

Fremont County

Hall & Oliger No. 4 Govt., SW cor. Sec. 27-38n-93w. S.D. 900 ft.
Lincoln O. & G. Co. No. 5 Tribal, C SW NE Sec. 23-1s-1e. T.D. 492 ft.; 2 B.O.P.D. in Bentonite at 173-74 ft.; bailed 10 B.O.P.D. initial in sdy. sh. at 472-85 ft.; will D.D. 50 ft.
Pilot Oil Co. No. 8 Hoffman, C SW SW Sec. 22-3n-1w. Cmtd. 15½-in. at 40 ft.
H. Kenyon Burch No. 9 Tribal, C NW NW Sec. 27-3n-1w. T.D. 1,212 ft.; P.B. to recomp. at 732-50 ft. where it made 13 B.O.P.D. in June 1938.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. T.D. 1,245 ft.; rng. 8⅝-in. to test S.O. at 830-45 ft. before D.D.
Frank Pouppirt No. 2 Fidelity Tr., NW NW SW Sec. 27-3n-1w. S.D. 1,200 ft.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. L. 1,630 ft.

Natrona County

The General Petroleum Corp. No. 1 Government, the discovery well in the Lakota on the Cole Creek structure, which is drilling deeper to test lower horizons, found the basal Sundance sand dry to 8,504 feet and is coring ahead. It had the top of the sand at 8,457 feet. It averaged 10 bbls. an hour from the Lakota at 8,020 feet, total depth, in June of last year.

General Pet. Corp. No. 1 Govt., C NW SE Sec. 21-35n-77w. Cg. 8,504 ft.
Summitt Oil Co. No. 2 Govt., NW NE NE Sec. 21-33n-80w. Drlg. 83 ft.

Niobrara County

There were no completions or new operations in Lance Creek. The Ohio Oil Co. No. 12 Carrie Putnam, a near completion in the Sundance, had increased its production at last report up to around 500 bbls. per day.

The Continental Oil Co. No. 1 Delahoyde, a test of lower horizons on the Ant Hills dome, 12 miles northeast of Lance Creek, is drilling at 6,004 feet in formation not reported by the company. Unofficially, it is said to have topped the Leo zone at 5,977 feet and to have shown slight oil saturation.

Continental Oil Co. No. 4 Apex-O.P.C.-4, SE SE NW Sec. 35-36n-65w. B.R.
Continental Oil Co. No. 9 Rohlff, SE NE SE Sec. 31-36n-65w. B.R.
Continental Oil Co. No. 15 Tom Bell Cattle, C SW SW Sec. 34-36n-65w. Cmtd. 13-in. 278 ft.
Ohio Oil Co. No. 11 Putnam, SE SE SW Sec. 33-36n-65w. Drlg. 478 ft.
Continental Oil Co.-Buck Creek Oil Co. No. 8-B Schuricht, SW NW SE Sec. 6-35n-65w. Drlg. sh. 1,295 ft.; 13⅜-in. 325 ft.
Ohio Oil Co. No. 12 Carrie Putnam, NW SW NW Sec. 4-35n-65w. T.D. 4,095 ft. in basal Sundance; tstg.
J. E. Manning No. 1 Hewitt-Govt., NW SW SW Sec. 4-35n-65w. Prep. to spd.
Minnelusa Oil Corp.-MacKinnie O. & D. Co. No. 5 Thompson, SE SE NW Sec. 7-35n-65w. Drlg. 5,048 ft.
Continental Oil Co. No. 3-B Dielman, SW SE NW Sec. 8-35n-65w. Drlg. 4,870 ft.
Continental Oil Co. No. 2 E. Rohlff, NW SE NW Sec. 32-36n-65w. Drlg. 5,165 ft.; top Converse 4,830 ft.
Minnelusa Oil Corp. No. 2 Joss, SE NE SW Sec. 6-35n-65w. S.D. 5,223 ft. for repairs.
F. F. Hintze et al No. 1 Wright-Govt., C NW SE Sec. 30-36n-63w. T.D. 4,964 ft.; P.B. to 4,190 ft.; redrld. to 4,245 ft.; rng. pkr. to test Dakota.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. T.D. 1,000 ft.; fsg, bailer.
Continental Oil Co. No 1 Delahoyde, CNL NE NE Sec. 25-37n-63w. Cg. 6,004 ft.

Sublette County

The Texas Co. has released a location for its first well for the season in the La Barge field in its No. 3-F, SW cor. NW Section 27-27n-113w, which it is drilling for its subsidiary, the California Petroleum Corp., of Utah.

Texas Co. No. 3-F, SW SW NW Sec. 27-27n-113w. Drlg. 45 ft. (first report).
California Co. No. 1 Unit 1, C SW NE Sec. 14-31n-109w. Spdg. 50 ft.
Wyo. Pet. Corp. No. 1 Budd, C NE NE Sec. 10-29n-113w. T.D. 1,695 ft.; prep. to run Schlumberger and then 8¼-in. and test S.O.&G.
Texas Co.-Frontier Pet. Co. No. 1 Govt. Unit, SE SE SW Sec. 1-28n-114w. T.D. 7,474 ft.; ran Schlumberger.

Sweetwater County

Sinclair-Wyo. Oil Co. No. 83 Lost Soldier, NW NE NE Sec. 10-26n-90w. T.D. 2,148 ft. in Sundance; prep. to run 5-in.
Salegna Oil Co. No. 1 Union Pacific, C SW SW Sec. 10-20n-104w. T.D. 5,230 ft.; prep. to set whipstock at 2,900 ft. and drill by.

Uinta County

Drusilla Connell No. 6 Govt., C NW NW Sec. 24-15n-118w. S.D. 180 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. T.D. 680 ft.; prep. to res.

Weston County

Whedon and others No. 1, C SW NE Section 21-46n-64w, which had a good show of oil in the Muddy and gave promise of extending the Osage pool to the west, failed to produce after casing was run and is dry and abandoned at 3,953 feet.

Union Trust Co. No. 1 Hockett, NE NE Sec. 23-47n-64w. S.D.O. 300 ft.; W.
Root et al No. 1 Robey, CSL NW SW Sec. 19-45n-61w. Fsg.; unreported depth.
John Brorphy No. 1 George, SW SE NW Sec. 26-48n-64w. Res. at 2,304 ft.
Lem Johnston No. 1, NW SW Sec. 24-44n-63w. T.D. 3,305 ft.; rng. csg.
F. P. Dilger et al No. 1, CEL SE SE Sec. 25-46n-64w. T.D. 1,521 ft. in top of sd.; S.O.; will run csg. and drill in with C.T.
Selby & Langford No. 2, NW SE NE Sec. 6-46n-63w. Drlg. below 460 ft.; showing for comml. well in sh.
Hunter & Saterlee No. 1, C NW NW Sec. 10-43n-63w. Fsg. unreported depth.
Kroker et al No. 2, CNL NE NW Sec. 31-47n-63w. Drlg. below 100 ft.
F. P. Dilger et al No. 4, CNL NE NE Sec. 25-46n-64w. Cmtd. 10-in. at 80 ft.; R.U.R.

MONTANA

The International Refining Co. (Texas Co.) increased runs from its Kevin-Sunburst connections to 50 per cent on May 1. Prior to April 1 it had been taking one-third of well capacity, but a month ago this was increased to 42 per cent.

Carbon County

R. R. Tarrant No. 3 Govt., C SW NW Sec. 4-6s-18e. Spd. to 80 ft. and S.D.
Alex Beaton No. 1, CSL SE SE Sec. 23-6s-23e. T.D. 1,596 ft.; str. cr. hole.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,381 ft.; fsg.; tools stk. at 1,600 ft.

Glacier County

Cut Bank chalked up four completions and four new operations. The best completion was the Glacier Production Co. No. 3 Miller, C NE NE Section 29-33n-5w, which swabbed 294 bbls. first 24 hours to 3,078 feet, total depth. The Sunburst sand was at 2,975-95 feet with a show of oil at 2,989 feet. The 7-inch was set at 3,047 feet and the Cut Bank sand was at 3,047-75 feet.

The Texas Co. No. 6 Unit 9, C SW NW Section 9-32n-5w, swabbed 60 bbls. in 22 hours at 3,016 feet. The 7-inch is at 3,000 feet.

(Continued on Page 118)

Southwest Texas Fields

(Continued from Page 111)

R. B. Bryant No. 1 Mitchell-Horton, perforated casing 7,128-38 feet, 85 bbls., eighth-inch choke. Corgey and Grote No. 6 McCampbell, 7,150 feet, 75 bbls., eighth-inch choke. Landrum and Jones Oil Co. No. 1 Wood, perforated casing 7,134-38 feet, 80 bbls., eighth-inch choke. Rantex Oil Co. No. 2 Lemon and Thompson, perforated casing 7,138-45 feet, 88 bbls., eighth-inch choke.

Caldwell County

Salt Flat field: Louis Crouch No. 3 Dye, 2,647 feet, 55 bbls. oil, 3 bbls. water, pumping.

Dewitt County

Slick field: The Whitex Co. No. 2 Poetter, 4,433 feet, abandoned.

Duval County

Benavides field: Salt Mount Oil Corp. No. 7-A Puig, perforated casing 4,762-69 feet, 74 bbls., 5/32-inch choke. Cedro Hill field: Magnolia Petroleum Co. No. 6 Duval County Ranch Co., sand 1,471-77 feet, 35 bbls., pumping. Fitzsimmons field: Sun Oil Co. No. 13 Brueggemann, perforated casing 6,267-82 feet, 136 bbls., 9/64-inch choke. Piedra De Lumbre field: Magnolia Petroleum Co. No. 24 Duval County Ranch Co., sand 2,013-30 feet, 350 bbls., jetting. Tesoro field: Rowan & Hope, Inc. No. 3 Cuellar Brothers, perforated casing 5,086-97 feet, 111 bbls., 7/32-inch choke; Sinclair Prairie Oil Co. No. 3 Garcia, 5,153 feet, abandoned.

Guadalupe County

Darst Creek field: Texas Co. No. 4 Dowdy, 2,537 feet, 72 bbls., oil, 255 bbls. water, pumping.

Jim Hogg-Brooks Counties

Kelsey field: Humble Oil & Refining Co. No. 11 Bass, 4,739 feet, 99 bbls., eighth-inch choke. Humble Oil & Refining Co. No. 7 McGill, 4,730 feet, 119 bbls., 9/64-inch choke.

Jim Wells County

South Alice field: Atlantic Refining Co. No. 2-A Bankers Mortgage, perforated casing 5,319-25 feet, 78 bbls., 3/32-inch choke. R. B. Bryant No. 2 Ingram, perforated casing 5,128-60 feet, gas well. Tom Graham No. 3-H Bankers Mortgage, perforated casing 5,325-27 feet, 21 bbls., eighth-inch choke. Henshaw Brothers No. 2 Thigpen, perforated casing 5,347-50 feet, 176 bbls., eighth-inch choke.

Live Oak County

White Creek field: H. D. & H., Inc. No. 1 Kibber, 2,000 feet, abandoned. Holland & Smith No. 2 Gayle, 1,785 feet, abandoned. G. O. Cage No. 1 Bonham, 1,740 feet, abandoned.

McMullen County

Ezzell field: Harry Ezzell No. 27 fee, perforated casing 1,559-62 feet, 101 bbls., pumping. Harry Ezzell No. 38 fee, perforated casing 1,455-60 feet, 39 bbls., pumping. Harry Ezzell No. 39 fee, perforated casing 1,495-1,505 feet, 66 bbls., pumping. E. M. Jones No. 80 Ezzell, perforated casing 1,547-52 feet, 127 bbls., pumping. E. M. Jones No. 81 Ezzell, perforated casing 1,542-50 feet, 110 bbls., pumping. E. M. Jones No. 82 Ezzell, perforated casing 1,512-20 feet, 151 bbls., pumping. E. M. Jones No. 84 Ezzell, 1,595 feet, abandoned. E. M. Jones No. 90 Ezzell, 1,581 feet, abandoned.

Medina County

Chacon Lake field: Fred Felty No. 1 Thompson, 385 feet, abandoned.

Nueces County

Riverside field: Seaboard Oil Co. No. 3 Ellen C. Wilson, perforated casing 5,006½-10½ feet, 96 bbls., eighth-inch choke.

Refugio County

Bonnieview field: Royal Oil & Gas Corp. and others No. 1 Oppenheimer, perforated casing 4,195-4,200 feet, gas well. La Rosa field: Coronado Corp. No. 3 Michna, perforated casing 5,902-05 feet, 167 bbls., eighth-inch choke. Tomoconnor field: Quintana Petroleum Corp. No. 24 Heard, perforated casing 5,888-96 feet, 682 bbls., quarter-inch choke. Quintana Petroleum Corp. No. 9 Williams and others, perforated casing 5,887-95 feet, 552 bbls., quarter-inch choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 3 Brooks, perforated casing 4,005-10 feet, gas well. Plymouth Oil Co. No. 4-D Cole, perforated casing 5,638-62 feet, 120 bbls., 7/64-inch choke. Plymouth Oil Co. No. 2 Solar Ficke, perforated casing 5,660-70 feet, 120 bbls., 7/64-inch choke. Sinclair Prairie Oil Co. No. 2 Womack, perforated casing 5,630-50 feet, 124 bbls., eighth-inch choke. Plymouth field: Plymouth Oil Co. No. 110-C Welder, perforated casing 5,640-44 feet, 171 bbls., eighth-inch choke.

Starr County

Sun field: Sun Oil Co. No. 4 Olivarez, 5,218 feet, abandoned.

Travis County

Kimbro field: J. C. Tittle No. 1 Pearson, 797 feet, abandoned.

Victoria County

McFaddin field: Barnsdall Oil Co. No. 26 McFaddin, sand 4,386-4,406 feet, 113 bbls., eighth-inch choke.

Zapata County

Mirando Valley field: Buffalo Oil Co. No. 6-C Hinnant, sand 1,983-92 feet, 125 bbls., 18 hours, jetting.

Oklahoma Operations

By
DAL DALRYMPLE

Old Wildcat Reworked, May Open Oil Pool Near Norman

An old Cleveland County wildcat, once abandoned as a failure in Wilcox sand, has been reconditioned and gives promise of opening a new Oklahoma oil pool. It is Nels Burton and others No. 1-A Norman, NW NW NE Section 17-9-2w, north of Norman.

When tested recently, it flowed 460 bbls. of fluid, cutting 10 per cent water, in 10 hours, most of the flow being in one head. In the next seven hours it averaged 26 bbls. an hour, cutting about 2 per cent salt water and basic sediment. Operators plan additional tests to determine potential of the well.

It was drilled to 7,695 feet about two years ago by H. R. Hollenbach and Hodges Drilling Co., and Wilcox sand was found dry. A few months ago, Burton and associates completed a deal to take over the well, cleaned it out and set casing on bottom. Casing was perforated at 7,540-50 feet and fluid rose 3,500 feet in the hole. Swab was lost in the hole and further delays occurred before production tests could be made. The operators estimate the well good for 600 bbls. of oil daily, with 15 to 20 bbls. of salt water.

About 1 mile east of No. 1 Norman, Burton and others were drilling below 4,920 feet at No. 1 Boggs, NE NE SE Section 16-9-2w, and making fast time.

The second well in the Oswalt area, Love County, was looking like a failure, although operators have not given up efforts to complete a producer. The test, Sinclair Prairie Oil Co. No. 2 Stockton, NE NE SW Section 26-6s-2w, was bottomed at 6,888 feet, with salt water showing. It was plugged back to 6,834 feet and pipe was to be perforated. Some saturation had been found in Deese sand at around that level.

An Indian lease sale will be held at the Five Civilized Tribes agency in Muskogee May 16. Leases will be offered at auction on 59 tracts of Indian lands in Craig, Creek, Okmulgee, Okfuskee, Hughes, Seminole, Latimer, Pushmataha, Pontotoc, Bryan, Marshall and Johnston counties.

Payne County

The twenty-seventh producer in the Ramsey pool, Payne County, was washed in late in the week. It was Mid-Continent Petroleum Corp. and others No. 10 Ramsey, NE SE NW Section 18-18-2e. It topped Wilcox sand at 4,815 feet, total depth 4,840 feet, and made unofficial potential of 6,350 bbls. of oil daily. It flowed 293 bbls. of oil the first hour and 235 bbls. the second hour, accompanied by 4,000,000 cu. ft. of gas. Another well in the field was due for completion within the week.

In the Coyle pool, Texas Co. No. 1 J. S. Graham, C E half NE SE Section 11-17-1e, topped Wilcox sand at 4,905 feet, total depth 4,938 feet, and flowed 216 bbls. of oil in 24 hours, completed.

Mid-Continent Petroleum Corp. No. 3 Gray, NW SW SW Section 18-18-2e, was building rig. Same operator's No. 1 Graham, NE SE SE Section 13-18-1e, and No. 2 Wetzel, SE NE SE Section 13-18-1e, had dug cellar and pits.

Southern-Southwestern

W. J. McAllister No. 3 Wade, SW SW NE Section 11-2s-8w, Stephens County, found sand at 2,075-95 feet, total depth, and pumped 51 bbls. of oil in 24 hours.

Wichita Oils, Inc., No. 12 Noble, NE NW NW Section 28-2n-10w, Lawton area, Comanche County, had sand at 438-60 feet, total depth 462 feet, and pumped 6 bbls. of oil daily.

Sam Ripps No. 1-A Wolfe, SW SE SE Section 22-2s-2w, Carter County, was dry and abandoned at 1,275 feet, total depth, in shale. In the same county, Magnolia Petroleum Co. No. 1 Nicholas, NE SE SW Section 9-4s-3w, an old well being deepened, was drilling below 1,113 feet.

New work in southwestern Oklahoma: Ray Stephens, Inc., No. 1 Kidd, SW NW NE Section 27-6-10w, Caddo County, location; George L. Pace No. 24 Allen, NE SW NE Section 3-2s-8w, Stephens County, waiting on cement at 2,205 feet; O. P. Burnham No. 2 Gainer, SE SW NW Section 10-1n-20w, Jackson County, rig; Wichita Oils, Inc., No. 12 Noble, SE NW NW Section 28-2n-10w, Comanche County, rig.

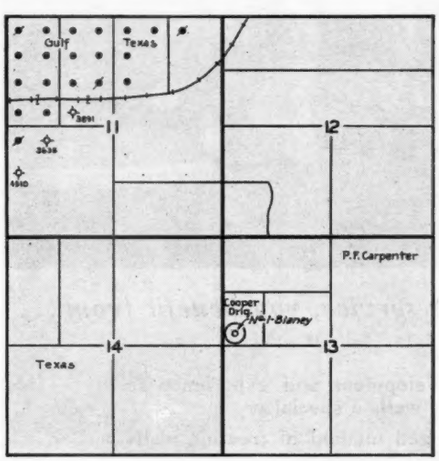
Wildcat Development

Wichita Oils, Inc., No. 1 Mace, SW cor. Section 11-5-15w, wildcat southeast of Sedan in Kiowa County, found sand at 100-29 feet, total depth 133 feet in shale, and pumped one-half barrel of oil daily, completed.

Richards & Richards No. 1 Anderson, NE NW SE Section 30-4-11w, Comanche County wildcat, was dry and abandoned at total depth of 952 feet in dolomite and shale.

Cooper Drilling Co. No. 1 Coughlin, SE NE SW Section 30-25-1e, Kay County wildcat, had Prue sand at 4,020-40 feet, Mississippi lime 4,310 feet, and was dry and abandoned at 4,502 feet, total depth.

Hughes Drilling Co. No. 1 Misener, C NE NW Sec-



Midcontinent Map Co., Tulsa

Cooper Drilling Co. No. 1 Blaney, Section 13-14-5, is a new Lincoln County wildcat, southeast of the Davenport pool

tion 10-20-4w, wildcat deep pay discovery in the old Brown area, Garfield County, flowed a total of 2,900 bbls. of oil in 15 days' testing and was completed for daily average flow of 105 bbls. It opened second Wilcox sand production for the area, topping that formation at 5,915 feet, finding pay at 5,918 feet, total depth 5,925 feet.

Delaney and Atlantic Refining Co. No. 1 Brammer, SE SW SW Section 25-11-4, wildcat south of the North Shawnee pool in Pottawatomie County, was moving in rotary.

Flynn and others No. 1 Work, NE SE SE Section 19-8-7, south of Bowlegs, Seminole County, was a wildcat location.

H. L. Berky No. 1 Dowell, SW NE NW Section 33-8-4, wildcat in the St. Louis district, Pottawatomie County, had spudded.

Pottawatomie County

Ike Iglehart No. 1 Phillips, NE NW NW Section 4-6-5, St. Louis district, Pottawatomie County, topped dolomite at 4,190 feet, total depth 4,225 feet, was acidized with 5,000 gallons, and flowed 255 bbls. of oil in 24 hours.

Norvall and others No. 1 Atwater, NW SE SE Section 9-7-4, had initial yield of 16 bbls. of oil daily after a shot. Top of Earlsboro sand was 3,506 feet, total depth 3,531 feet.

Tabor and others No. 2 Miller, SW SE SE Section 29-7-5, had dolomite at 4,050 feet, total depth 4,125 feet, was treated with 5,000 gallons of acid, and flowed 290 bbls. of oil in 24 hours.

Same operators' No. 3 Miller, SE NW SE Section 29-7-5, had initial daily flow of 300 bbls. of oil after acidizing with 5,000 gallons. Production was from dolomite topped at 4,050 feet, total depth 4,123 feet.

Hall & Briscoe No. 4 Smith, NW NE NE Section 32-7-5, found dolomite at 4,060 feet, was bottomed at 4,112 feet, acidized and flowed 205 bbls. of oil in 24 hours.

J. F. Smith and others No. 2 Tarter, SW SW SW Section 32-7-5, had dolomite at 4,055 feet, total depth 4,074 feet, was acidized and flowed 575 bbls. of oil in 24 hours.

Denver Producing & Refining Co. No. 1 Jones, SE SE NW Section 5-6-5, an old well, was dry and abandoned after deepening to 4,384 feet.

Tillico No. 2 Brister, NW NW NE Section 28-7-4, an old well, was deepened from 4,133 feet to 4,164 feet and recompleted for 175 bbls. of oil daily.

Amerada Petroleum Corp. No. 4 Harrison, SW NW SW Section 33-7-4, an old well bottomed at 4,123 feet, was deepened to second Wilcox sand at 4,230 feet, total depth 4,244 feet, was shot and flowed 713 bbls. of oil in 24 hours, recompleted.

Phillips Petroleum Co. No. 3 Davis, SE SW SE Section 2-7-6, an old well, was recompleted for 17 bbls. of oil daily after plugging back. It found Hunton lime at 4,061 feet and was bottomed at 4,272 feet.

New work in Pottawatomie County: Indian States Oil Co. No. 1 O'Connor, NE cor. Section 6-10-4, drilling; Helmerich & Payne, Inc., No. 2 Peter, NW NE SW Section 28-8-4, rig on ground; Russell Patterson No. 1 Edwards, NE SE SE Section 28-6-5, building rig.

Pontotoc County

Farmers Mutual Royalty Corp. No. 1 Waite, NW NW NE Section 9-5-5, Pontotoc County, was completed for 25 bbls. of oil daily at total depth of 2,720 feet.

J. E. Crosbie, Inc., No. 1-A Harden, NW SE NE Section 30-2n-7, Fitts district, was plugged back from 3,665 feet to 2,850 feet and recompleted for 21 bbls. of oil daily.

J. R. Pierce No. 1-A Kroeger, SE NE SW Section 30-5-7, was dry and abandoned at 1,475 feet, total depth.

Magnolia Petroleum Co. No. 12 Norris, SW SW NE Section 25-2n-6, was rigging up.

Lincoln County

Wilcox Oil & Gas Co. No. 3 Terry, SW SE SE Section 9-14-6, Sac and Fox pool, Lincoln County, topped Prue sand at 3,052 feet, total depth 3,119 feet, was shot with 75 quarts and had initial daily production of 122 bbls. of oil.

Same company's No. 3 State, SE NW SE Section 16-14-6, pound Prue sand at 2,984 feet, total depth 3,077 feet, was shot with 190 quarts and had initial daily flow of 224 bbls. of oil.

Jones Associated Oil Co. No. 6 May, SW SE SE Section 10-14-6, was a location. Allied Materials Corp. No. 1 Tipken, C SW NW Section 15-13-6, was a rig.

Seminole County

Sunray Oil Co. No. 2 Swan, NE SE SE Section 12-6-5, Grayson area, Seminole County, found dolomite at 3,715 feet, was bottomed at 3,780 feet, acidized with

6,000 gallons and flowed 168 bbls. of oil in 24 hours.

Troup & Moore No. 1 White A, NW SW SE Section 30-6-8, had Gilcrease sand at 2,597 feet, total depth 2,964 feet, plugged back to 2,610 feet, and had initial daily yield of 72 bbls. of oil.

Atlantic Refining Co. No. 2 Norvell, NW NW NW Section 21-7-6, found Wilcox sand at 4,392 feet, total depth 4,396 feet, and flowed 336 bbls. of oil in 24 hours

Cities Service Oil Co. and others No. 4 Fish D, NW SE SE Section 19-7-8, an old well, was deepened from 3,088 feet to dolomite at 4,122 feet, total depth 4,172 feet, and recompleted for 419 bbls. of oil daily.

Okfuskee County

W. A. Fleming No. 1-A Scott, NE SW NE Section 25-10-11, Okfuskee County, was completed for 13 bbls. of oil in 24 hours at total depth of 2,124 feet.

Staples No. 1-B Wilson, NW SW SW Section 22-12-11, was dry and abandoned at 2,234 feet total depth.

Hyer & Kirchner No. 1 Board, SE SW NW Section 10-13-10, had Dutcher sand at 2,684 feet, total depth 2,685 feet, and produced 144 bbls. of oil in 24 hours.

Muskogee-Wagoner Counties

Swick Oil Co. No. 1-A Millison, SE SE NE Section 32-15-15, Muskogee County, was dry and abandoned at 1,355 feet, total depth.

Sewell and others No. 1 Joseph, SW SE NE Section 30-17-18, Wagoner County, based Mississippi lime at 1,070 feet, total depth 1,107 feet, and was completed for 340,000 cu. ft. of gas daily.

Shirley No. 1 Lancaster, C SW NE Section 30-17-18, Wagoner County, had sand at 748-60 feet, total depth, and pumped 35 bbls. of oil daily.

Swick Oil Co. No. 2 Millison, NE SW NE Section 32-15-15, Muskogee County, was rigging up machine. J. R. Parks No. 7 Hildebrand, NW NW SE Section 17-14-19, Muskogee County, had spudded.

Creek-Pawnee-Tulsa

D. B. Siebert No. 2 Taylor, SW NW NW Section 18-17-11, Creek County, had Tonkawa sand at 2,226 feet, total depth 2,233 feet, and produced 4,000,000 cu. ft. of gas daily.

Kessler Oil & Gas Co. No. 2 Franklin, NE NW NE Section 29-18-9, Creek County, found Dutcher sand at 2,882-93 feet, total depth 2,896 feet, and pumped 50 bbls. of oil daily.

Sand Springs Home No. 2 Endicott, SW NE NE SE Section 24-19-7, Creek County, was dry and abandoned at 954 feet, total depth.

R. R. Kirschner No. 1-A Lashley, NE SW NW Section 27-20-9, Pawnee County, was dry and abandoned at 2,275 feet, total depth.

Peter Adamson, Jr., No. 3 Sharp, SE NE SW Section 34-21-8, Pawnee County, topped Layton sand at 1,234 feet, total depth 1,641 feet, plugged back to 1,292 feet and pumped 4 bbls. of oil daily.

Murry and others No. 2 Bruner, NE NW NE Section 20-19-14, Tulsa County, Alsuma area, had a hole full of water and was abandoned at 1,321 feet, total depth.

In Osage County, W. C. Norris No. 11 Osage, NW NE SW SE Section 24-25-8, was completed for 6 bbls. of oil daily at 2,411 feet, total depth.

Texas Co. No. 1 Osage, NW cor. Section 23-24-7, and Norbla Oil Co. and Peters Oil Co. No. 5 Osage, NE SE SW Section 30-22-9, were locations in Osage County.

In Okmulgee County, C. L. Hoss No. 16 Bassett, NE SW NW Section 15-14-14, was drilling below 102 feet.

In Garfield County, Sinclair Prairie Oil Co. No. 25 Hoy, SE NW NE Section 25-22-4w, was a location.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending May 6, and the preceding week, was as follows:

	Barrels	
	May 6	Apr. 29
Allen	6,800	6,750
Billings	4,590	5,875
Burbank	8,025	7,775
South Burbank	9,350	9,375
Balance Osage	17,900	18,725
Blackwell district	3,750	4,025
Bristow-Slick	7,350	7,125
Chandler	1,675	1,650
Crescent	3,650	3,550
Cromwell	3,050	3,025
Cushing-Shamrock	10,100	10,125
Duncan district	4,400	4,425
Edmond	5,500	5,450
Fish	3,850	3,775
Fitts	27,500	27,750
Jesse	2,300	2,550
Graham-Fox	4,150	4,175
Gray	850	875
Healdton	9,750	9,650
Hewitt	4,000	4,025
Keokuk	3,675	3,725
Konawa	1,250	1,125
Lucien	7,825	7,850
Moore	3,475	3,525
Oklahoma City	103,050	104,150
Olympic	3,350	3,400
Ramsey	4,185	4,550
Sasakwa	1,400	1,375
Sholem-Alechem	2,975	3,050
Seminole district:		
Bowlegs	8,675	8,725
Carr City	3,000	3,025
Dora	4,050	4,125
Earlsboro	4,950	5,050
South Earlsboro	600	600
East Earlsboro	4,150	4,175
Little River	7,375	7,450
East Little River	750	800
Maud	1,125	1,125
Mission	1,650	1,625
Seminole	8,175	8,200
East Seminole	1,425	1,400
Searight	2,550	2,575
Total Seminole	48,475	48,875
St. Louis-Pearson	38,750	39,250
Tatums	2,225	2,250
Tonkawa-Garber-Thomas	4,200	4,150
Wewoka	2,450	2,475
Yale-Jennings	3,725	3,700
Other pools	90,000	88,000
Total Oklahoma	459,550	462,125

New York-Penna. Gas Fields

COUDERSPORT, Pa., May 8.—Any doubts that the Cameron Township, Steuben County, Oriskany pool, was of more than limited extent were removed during the past week when two wells, one about 1,000 feet northeast and the other about 1,500 feet southwest of the opener both found salt water in the sand after encountering small gas shows.

Belmont Quadrangle Drilling Co. completed its well on the Andrew Taft farm, a short distance northwest of the William Preece farm failure, at 4,202 feet. It topped the Oriskany at 4,193 feet, got a show gauging 62,000 cu. ft. at 4,200 feet and encountered the salt water 1 foot deeper.

New York State Natural Gas Co. completed its well, southwest of its discovery on the F. Boyd farm, at 4,094 feet. This well found the top of the Oriskany at 4,084 feet, got a show gauging 70,000 cu. ft. at 4,089 feet and encountered the salt water at 4,090 feet.

Another Steuben County well was also completed.

(Continued on Page 118)

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North and East Texas

By
D. H. STORMONT

Clay County Joins Leaders in North Texas New Work

WICHITA FALLS, Tex., May 8. — The most active wildcat drilling campaign and lease and royalty play ever experienced in Clay County made it by far the most important county in North Texas' recent exploratory program. The completion of the Bridwell Oil Co. No. 1 Halsell for a new pool opener and the possibility of a new and deeper Strawn sand pay for the new Browning pool led the developments with the staking of new wildcats and the assembling of new drilling blocks being also reported in several areas throughout the southern and western part of the county.

Six miles west of Blue Grove and in the Browning pool, recently opened by Burns No. 1 Browning, Shell Oil Co., Inc., No. 1 Davis, south offset to the discovery, indicated a deeper producing horizon when saturation was found at 4,752-62 feet. Operators believed the showing would develop into commercial production, but as the week closed, the test was drilling below 4,780 feet toward completion of its 5,000-foot contract. Plans are to plug back and test the horizon in the event no further saturation is encountered in finishing the contract.

Bridwell Oil Co. No. 1 Halsell, Block 16, W.C. Survey, 2 miles north of the town of Halsell and 9 miles northwest of the Browning pool, completed its official production gauge and has shown itself to be a better producer than the discovery well in the Browning area. No. 1 Halsell gauged 158½ bbls. of oil in three hours under starting pressures of 800 pounds on tubing and 600 pounds on casing and final pressures of 450 pounds on tubing and 140 pounds on casing. Pay is from sand from 4,754-93 feet.

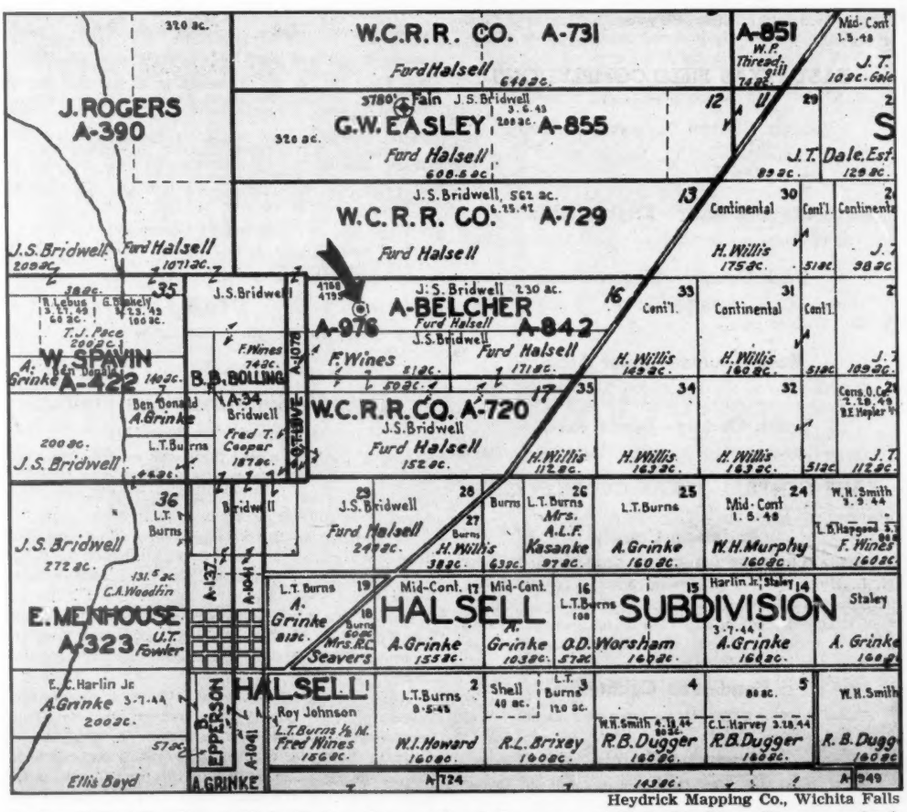
As a result of the completion of No. 1 Halsell and the recent discovery of the Browning pool, virtually all of Clay County has been thrown open to possible deep Strawn production, the horizon having been heretofore only sparsely explored throughout the county. Strawn production in the K.M.A. field in Wichita County, just west of Clay County, and also in the lately discovered Nocona pool in Montague County and the Walnut Bend pool of Cooke County, both counties lying in that order immediately east of Clay County, places the area in what may be called the "big middle" of a rapidly increasing Strawn exploratory campaign throughout the northernmost counties of North Texas.

Several new wildcats were staked in Clay County during the past week and three or four large drilling blocks were assembled. Highlight of the leasing play was the deal whereby Shell Oil Co., Inc., paid the George W. Scaling Estate of Fort Worth $25 per acre for 1,500 acres out of Blocks 83, 105, and 106 of the J. H. Belcher Survey, making, for Shell, a total of 2,700 acres in its large block just south of the Browning pool. Shell plans to start drilling on its block within the next 60 days.

Gulf Oil Corp. has assembled a block of 10,000 acres 3 miles southwest of Henrietta. Assembling was done by L. E. Hults, Fort Worth. The west edge of the block is 3½ miles due east of the new Bridwell pool opener.

Three miles southeast of Henrietta, H. M. Horton, formerly with the Superior Oil Co., has partially reassembled an old block held by Superior. Horton is reported to have turned 3,000 acres of it to John E. Farrell, Worth Worth operator in the K.M.A. field, and a test will be started immediately. West edge of the Horton block is 3 miles east of the east edge of the Gulf block.

In the southeast corner of the county, Youngblood & Foree of Dallas have assembled a block of 5,000 acres, 10 miles southeast of Henrietta, on which a drilling obligation calls for a wildcat by August 1. Tentative location for the test is on the R. F. Wynn tract, Block 1, T.&N.O. Survey, Abstract 674.



Bridwell Oil Co. No. 1 Halsell, 2 miles north of the town of Halsell, Clay County, which gauged 158½ bbls. in three hours, has started a very active drilling and leasing campaign in the county

Cooke County

Interest in Cooke County centered on No. 8 Best in the Walnut Bend field which is indicating a new and deeper horizon for the pool, and on Sinclair Prairie's announcement that it would start construction of a pipe line out of the field.

On the east side of the Walnut Bend field, Sinclair Prairie Oil Co. is preparing to drill plug at its No. 8 Best. Casing was cemented at 5,141 feet on top of oil sand drilled from that depth to 5,173 feet, total depth. On a drill-stem test the well is reported to have shown 600 feet of 36-gravity oil.

With nine oil wells in the field and several more wells in the drilling stage, Sinclair Prairie Oil Co. has announced that it will construct a 15-mile, 6-inch line out of the field to connect with its trunk line leading to the company's refinery at Fort Worth. Estimated to cost approximately $30,000, the line will be constructed by Mitchell-Stewart Construction Co., with work to start next week. The line will be 15 miles long, extending from Windsor Switch, 4 miles north of Gainesville, southwest to Muenster, connecting with the 8-inch line extending into Fort Worth.

In the Voth pool, Cooke County, an east extension to production was indicated at Whitfield, Pearson & Grimes No. 6 Voth, in the Z. P. Fulton Survey, Abstract 1250. The outpost topped the Ellenburger pay at 1,850 feet, total depth, and shut down to run casing before drilling into the sand. The operators have staked a new southwest outpost to the field at their No. 7 Voth.

Archer County

Linking of the 4,200-foot outpost producer, Mazada Oil Co. No. 1 Finley, in the Abner Nails Survey, about a mile due north of the discovery well, with the northwest extension area of the Hull-Silk pool, has been accomplished. Petroleum Producers No. 1 Shepherd, south offset to the Mazada well, was completed to flow 105 bbls. of oil in three hours from sand at 4,268 feet to 4,322 feet, total depth. The 4,300-foot pay in the Hull-Silk pool has now overshadowed the original 3,800-foot discovery horizon, there being some 1,200 acres proven for production at that level.

NORTH TEXAS COMPLETIONS

Archer County

Bridwell Oil Co. No. 1 W. O. Davis, 1,069 feet, dry. Chapman & McFarlin No. 2 L. F. Wilson E, 4,273-42 feet, 360 bbls. Jennings Drilling Co. No. 1 L. F. Wilson, 1,460 feet, dry. Riner and others No. 1 R. C. Kinder A, 998 feet, dry. Shappell Oil Co. No. 22 Grace Bell, 1,011-16 feet, 60 bbls.

Clay County

Duncan, Arnhold & Duncan No. 9 T. P. Duncan, 1,184-1,220 feet, 130 bbls. Kimmell Lee & Co. No. 13 Mrs. Lou Firestone, 1,110-35 feet, 147 bbls. Kimmell Lee & Co. No. 14 Mrs. Lou Firestone, 1,336 feet, dry.

Wichita County

Board of Mineral Development Co. 11 State Lands, 3,690-3,770 feet, 560 bbls. Consolidated Oil Co. No. 23 W. P. Ferguson, 3,703-90 feet, 1,200 bbls. J. M. Corbett No. 1 Mrs. O. F. Bailey, 550-60 feet, 10 bbls. E.C. Oil Co.

No. 2 A. W. Burnside C, 3,829-4,102 feet, 25 bbls. Fain McFaha No. 1 Shallow E. P. Griffin B, 1,807-20 feet, 70 bbls. I. E. Harwell No. 1-D First National Co., 3,865-3,927 feet, 275 bbls. King Oil Co. and others No. 14 Charles Pettit, 3,716-77 feet, 720 bbls. H. S. McDonald No. 1 J. E. Hobson, abandoned location.

Cooke County

McKee & Street No. 1 Walterscheid, 825 feet, dry. Sinclair Prairie No. 6 J. M. Best, 4,950-57 feet, 130 bbls. Whitfield and others No. 4 Voth, 1,840-48 feet, 175 bbls.

Jack County

Bowers & Browning No. 1 W. M. Garrett, 790 feet dry. A. C. Parks No. 7 Ira Coates, 482-506 feet, 5 bbls. Rowan & Nichols No. 1 E. Haag, 3,333 feet, dry.

Young County

Paul Atchley No. 12 S. M. J. Benson, 922 feet, dry. Brown & Wheeler No. 1 Eichelberger, 940 feet, dry.

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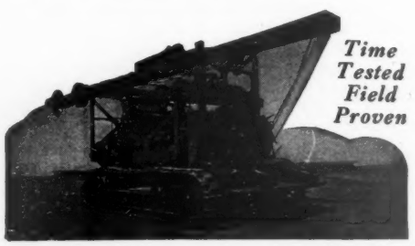

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Horwitz & Oldom No. 8 F. C. Green, 727-33 feet, 10 bbls. Underwood & Campbell No. 37 Campbell, 844-900 feet, 22 bbls. E. D. Willis No. 1 G. W. Terrell, 693 feet, dry.

Montague County

Benton & Holmes No. 1 Joe Bowers, 2,898-2,958 feet, 26 bbls. Continental Oil Co. and others No. 18 S. J. Hott, 2,116-21 feet, 90 bbls.

Wilbarger County

A. E. Blair No. 1 B. J. Scott, 970 feet, dry.

EASTERN TEXAS

DALLAS, Tex., May 8. — Four new wildcats were staked throughout the eastern Texas area, and two wells in the Navarro Crossing pool were completed as distillate wells to keep the activity in that district at its recent high.

On a trend about 3 miles southwest from Henderson County's Flag Lake area, Topaz Oil Co. of Dallas has staked a wildcat across the Trinity River, in Navarro County. It is the company's No. 1 E. Trammel, in the southwest 40 acres of a 160-acre tract in the R. Mathews Survey. It is understood that the well will seek Woodbine production along a fault which is believed to be an extension of the Flag Lake structure.

New operations were also listed for Falls, Kaufman and Trinity counties. Jack Shaunfield is drilling below 400 feet in No. 1 Bargonier, J. M. Graham Survey, southeast of Chilton in Falls County. In Kaufman County Valentine & DeArman have staked No. 1 C. E. Bowman in the D. Falcon Survey, 1½ miles south of the town of Kaufman, Operators are moving in rig for immediate drilling. Trinity County's new operation was W. C. Shirley No. 1 Southern Pine Lumber Co., J. A. Sepulveda Survey, 5 miles northwest of Apple Springs. The test is drilling below 692 feet.

Navarro Crossing Pool

Second test in the northeast Leon County extension area of the Navarro Crossing pool of Houston County was completed as a distillate producer to somewhat limit oil possibilities in that area. Humble Oil & Refining Co. and Sun Oil Co. No. 1 Harris, north offset to the partnership's No. 1 Swift, Leon County extensioner, was being completed as a gas-distillate producer from a plugged back depth of 5,850 feet. Casing was perforated from 5,834-50 feet and the test is flowing through one-eighth inch tubing choke, no gauge having as yet been reported.

EAST TEXAS FIELD COMPLETIONS

(One-hour gauges)

Gregg County—Longview Area

General American Oil Co. No. 19 C. W. Bingham, 3,507-12 feet, 60 bbls.

Gregg County—Kilgore Area

The Texas Co. No. 16 W. Baster, 3,634-38 feet, 40 bbls.

Rusk County—Kilgore Area

Humble Oil & Refining Co. No. 17 M. E. Minor, 3,700-01 feet, 60 bbls.

Rusk County—Joiner Area

Roosth-Genecov No. 3 G. Curbo, 3,605-15 feet, 5 bbls.

Smith County—Joiner Area

Osher-Goldsmith No. 4 A. Wiley, 3,750-51 feet, 20 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Anderson County

F.H.E. Oil Co. No. 2 McKenzie, 5,320-25 feet, 76 bbls. H. L. Hunt No. 1-B Robinson-Hombs, 5,158-5,340 feet, 95 bbls. Tide Water-Seaboard No. 2 Keeling, 5,252-5,335 feet, 115,000,000 cu. ft. gas. Tide Water-Seaboard No. 11 Shaw & Cern, 5,197-5,328 feet, 10 bbls. distillate per hour.

Henderson County

Texas Co. No. 2 Tarkington, dry and abandoned at 3,030 feet.

Limestone County

W. H. Gant No. 1 Vol De Long, dry and abandoned at 2,975 feet.

McLennan County

J. E. Thompson No. 1 F. E. Goodman, dry and abandoned at 815 feet.

Rocky Mountain Area

(Continued from Page 114)

The Glacier Production Co. No. 1 Gallison Unit, SE SE NW Section 27-34n-5w, was a small gas well at 2,622 feet, total depth, gauging 490,000 feet after being shot at 2,590-2,605 feet.

The Glacier Production Co. No. 2 McDougal, C SW NW Section 31-34n-5w, swabbed 61 bbls. first 16 hours at 2,875 feet from the pay at 2,819-66 feet. It was then shot at 2,855-65 feet and is swabbing and cleaning out.

A. R. Pardue No. 4 Tribal-179, SE NE SE Sec. 12-32n-6w. Spdg. (first report).
Glacier Prod. Co. No. 1 Larson, CEL NE NW Sec. 35-36n-6w. Loc. (first report).
Glacier Prod. Co. No. 2 Hawkins, NE NE SW Sec. 17-33n-5w. Loc. (first report).
Glacier Prod. Co. No. 3 Corrigeaux, C SE SW Sec. 21-33n-5w. R.O.G. (first report).
A. R. Pardue No. 2 Tribal-170, NW SW SW Sec. 7-32n-5w. R.O.G.
R. C. Tarrant No. 4 State, SE NE SE Sec. 36-34n-6w. R.O.G.
Chandler & Newell No. 1 Hinstrager, C NE NW Sec. 24-37n-5w. Drlg. 2,345 ft.
A. B. Cobb No. 1 Yargo, C SE NE Sec. 19-37n-4w. T.D. 475 ft.; cmtd. 10¾-in.; W.O.C.
Santa Rita O. & G. Co. No. 2 Govt., SW SW NE Sec. 7-32n-5w. Drlg. 1,075 ft.; Colo. 450 ft.; 10¾-in. 480 ft.
Santa Rita O. & G. Co. No. 4 Ritchie, C NW NW Sec. 5-33n-5w. Rng. 7-in. to 2,743 ft.
Tarrant-Wyley No. 2 Connolly, C SW NE Sec. 31-34n-5w. Spdg. 100 ft.
Tarrant-McLellan No. 2 McLellan, C SW SE Sec. 12-34n-6w. Drlg. 1,900 ft.

Meagher County

Dan Drumheller No. 1 Moss Agate, SW SE NE Sec. 25-7n-7e. R.U.C.T.

Petroleum County

Nelson-Story-Hogan, Ltd., No. 1 Austed, SW NW SE Sec. 22-13n-28e. Drlg. 1,300 ft.; 10-in. at 1,275 ft.
H. Clark Rowland No. 1 Brundidge-Mink, NE SE NW Sec. 35-14n-25e. T.D. 630 ft.; landed 8⅝-in. on bttm.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. T.D. 2,835 ft.; W.O. 3-in.

Toole County

Kevin-Sunburst had one completion and one new operation. Coolidge & Coolidge No. 6 Shaw, NE cor. Section 35-36n-2w, is pumping 22 bbls. daily from the top of the Sunburst at 1,532 feet, which also is the total depth.

The Big West Oil Co. No. 8 Dahlquist, SW NW NE Section 28-35n-3w, which last week was reported the biggest well completed in the field for several years, and which was pinched in to 500 bbls. per day, with no gauge on total capacity, is still flowing 22 bbls. per hour through a three-eighth inch choke, under 145 pounds back pressure. It is not showing any water.

A. E. Crumley & Son No. 16 Fryberger, SE NE SW Sec. 24-35n-3w. Drlg. 400 ft. (first report).
Big West Oil Co. No. 9 Dahlquist, C NW NE Sec. 28-35n-3w. Drlg. 1,024 ft.; set 8¼-in.
Provel & Shea No. 2 Govt., SW NW SW Sec. 11-35n-3w. Loc.
Fulton-Commonwealth No. 2 Thompson, SE NE SE Sec. 28-35n-3w. T.D. 1,728 ft.; ran 5 5/16-in.; pulling 8¼-in.
W. M. Cassidy No. 1 Phoenoix, CNL NW NW Sec. 28-35n-4w. T.D. 2,325 ft.; prep. to D.D.
K. C. Morton No. 1 Govt., SW SW SE Sec. 1-35n-3w. T.D. 1,813 ft. in contact; fsg. tbg.

Yellowstone County

Nelson Story-Hogan, Ltd., No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; R.U. to res.; (formerly Signal O. & G. Co.).

UTAH

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. T.D. 3,090 ft.; W.O. 6⅝-in.

New York-Penna. Gas Fields

(Continued from Page 116)

Hanley & Bird completed their well on the Woodward farm in Woodhull Township at 3,910 feet with an initial open flow of 1,400,000 cu. ft. The flow was raised from 600,000 cu. ft. by two 10-quart shots.

In addition to three completions, three new locations were staked in New York, all by G. L. Cabot, Inc. These are a No. 2 on the Dora Barber farm, Willing Township, Allegany County; a No. 3 on the C. Crane farm, 2,000 feet north of the No. 1, in Woodhull Township, Steuben County, and a No. 1 on the Federal Land Bank farm in Cameron Township, Steuben County.

An encouraging note was struck in the Sharon Township, Potter County, development when New Penn Development Co. encountered a show gauging 238,000 cu. ft. in the top of the Oriskany on the Dunshie farm. This is the first test drilled to this sand south of the fault paralleling the axis. This well topped the Onondaga lime at 5,071 feet and reached the top of the Oriskany at 5,109 feet. The first show was encountered at 5,109½ feet and operations were suspended at 5,110 feet to run casing.

North Louisiana, Arkansas

By GEORGE WEBER

Prospective Discoveries in Lafayette, Union Counties

SHREVEPORT, La., May 8.—Two "shallow" wildcat oil wells in South Arkansas; two deep gas-distillate tests in East Border Texas and North Louisiana, and an important southeast edge test in the Cotton Valley field marked the centers of interest in the tri-state district during the past week.

In the Stamps area of Lafayette County, the new discovery well, Erwin & Leach No. 1 Patton, C S half NW NE Section 24-16-24, after flowing 100 bbls. in 15 hours, showed a tendency to establish a settled production rate of about 2½ bbls. per hour through a quarter-inch choke, with tubing pressure 140 pounds and casing pressure 300 pounds. The crude gravity runs 41.8 degrees, and the oil is clean, dark in color and paraffinic.

An east offset well, spudded immediately following the strike in No. 1 Patton, is East Texas Refining Co. and Erwin & Leach No. 1 J. Bell Estate, NW cor. NW Section 19-16-23. This test was reported to have found a stray sand at 2,736-56 feet which showed oil saturation. The value of the sand is not yet determined, and it is probable that the hole will be carried to the lower Glen Rose section, which is producing in the discovery well at 3,480 feet.

A semiwildcat in the Champagnolle area of Union County, Arkansas, attracted attention by blowing out in the Tokio sand at about 2,700 feet. Sam Sebersky and others No. 2 J. N. Jerry, in the SW quarter of Section 21-17-14, was testing the section. On a drill-stem test at 2,687-97 feet, using a three-eighths inch bottom choke, the well showed eight stands of oil, cut with gas, and one joint of soft, porous salt-water sand in 17 minutes, with working pressure of 204 pounds. A second test, made at 2,689-98 feet, using one-quarter inch chokes, recovered two joints of cut oil and drilling fluid with two joints of salt water sand in 11 minutes. A string of 6-inch casing was set at 2,691 feet, with total depth at 2,698 feet.

The well was drilled in and swabbed, showing good gas pressure and at latest report was flowing into tanks. This discovery will sustain the nominal drilling activity in the Champagnolle area, it is expected.

Columbia County

In the Atlanta field of Columbia County, the second oil well is expected to be completed during the week-end. Tide Water Oil Co. No. 1 Price topped the Smackover formation at 8,202 feet, Reynolds oolitic lime section at 8,227 feet and set 5½-inch casing at 8,234 feet. Operators were fishing for a Halliburton line, and completion of the well will follow cleaning of the hole.

The Magnolia field, most active in South Arkansas, gained two new wells during the week.

Cotton Valley

Coring continued in the Midstates Oil Corp. No. 1 Giddens, a southeast edge test, 100 feet northwest of C SW SW Section 30-21-9. Topping the lower Marine at 8,054 feet, the well showed 6 feet higher than the Stanolind Oil & Gas Co. No. 1 Pardee, discovery well in the Bodcaw oil section for the field. The "D" sand, productive of oil on the south edge of the field, was cored at 8,482 feet and consisted of a tight sand with an odor and slight saturation.

In the Bodcaw section, pay sand in the gas-distillate field proper, the operators cored at 8,576-94 feet, recovering 9 feet of good sand, with a strong gas and distillate odor and some stain. Continuing in the gas-distillate section of the sand, the well was cored to 8,601 feet, the full section being good, uniform gas-distillate sand, with no showing of oil saturation. At 8,601 feet the well went into a sandy shale streak, which is believed to correspond to the shale break occurring in the Stanolind well, which encountered gas-distillate sand above the break and a good oil sand section below it. Close attention will be paid this outpost well during the next few days.

The Stanolind Oil & Gas Co. this week staked the long awaited deep test in the Pine Island field of Caddo Parish. This test, No. 131 Dillon Heirs, located in the C SE NE Section 14-21-15, will be carried to the lower Marine, where it is generally believed prospects are excellent for deep production. Contract for the drilling has not yet been let, but the operations are expected to get under way shortly.

Production by Pools

Estimated daily gross production all companies during week ending May 5:

NORTH LOUISIANA

	Barrels
Bellevue	730
Caddo light	4,500
Caddo heavy	2,350
Converse	500
Cotton Valley heavy	100
Cotton Valley light	*12,940
Cross Lake-Shreveport	5,850
De Soto and Red River	1,125
Elm Grove	270
Haynesville	2,935
Holly	75
Homer	2,690
Lisbon	5,260
Pleasant Hill	90
Rodessa	28,660
Sarepta-Carterville	†530
Sligo	1,290
Sugar Creek	270
Urania	2,720
Zwolle	2,785
Total	75,670

SOUTH ARKANSAS

Atlanta	250
Buckner	1,830
Champagnolle	1,700
El Dorado	1,690
Lisbon	240
Magnolia	5,845
Miller County	325
Nevada	590
Rodessa	5,165
Schuler	17,990
Smackover light	1,900
Smackover heavy	14,700
Stephens	525
Troy	960
Urbana	1,140
Village	605
Total	55,455

Texas side of Rodessa field 30,385 bbls. daily.

*4,116 bbls. is distillate.
†230 bbls. is distillate.

Bienville Test

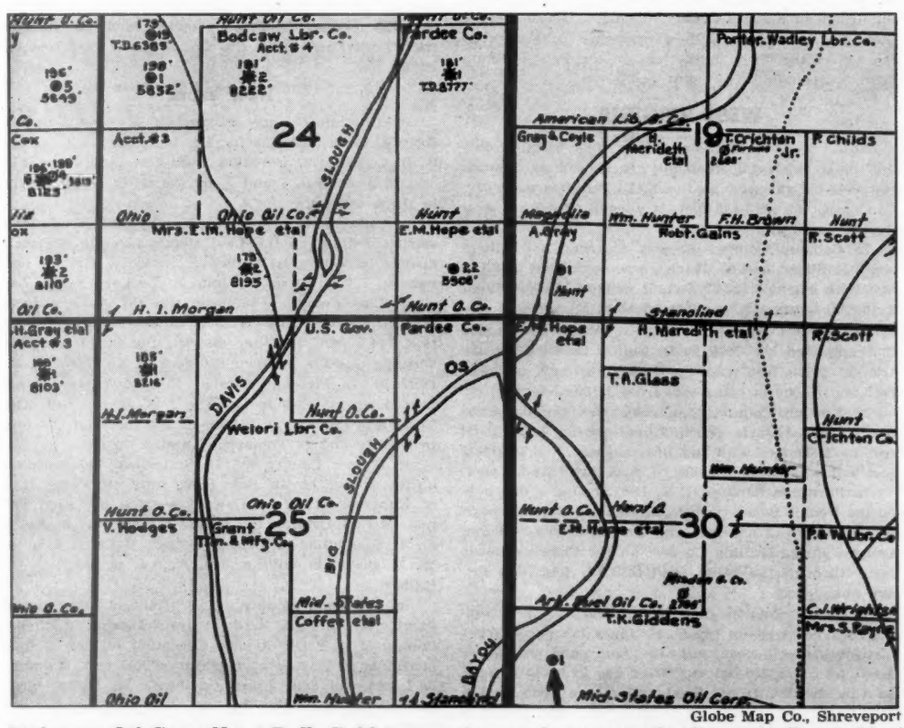
In the Bisteneau area of Bienville Parish three drilling wells are active. The most advanced, Arkansas Louisiana Gas Co. No. 2 Gayoso, is coring below 8,154 feet. The same operators' No. 1 Shehee this past week tested considerable gas in the Pettit lime section. The first test, made at 5,090-5,150 feet, showed 20,000,000 cu. ft. of gas with a tool pressure of 500 pounds. The tool was open for nine minutes. A second test at 5,156-95 feet developed 1,000,000 cu. ft. of gas. Porosity in the Pettit lime is shown at 5,093-5,105 feet, 5,124-35 feet, and 5,160-83 feet, with the top of the section at 5,088 feet. A string of 7-inch casing was set on bottom at 5,195 feet.

In Bossier Parish, just east of the Red River and 6½ miles northeast of the Shreveport field, the Harry Hanbury No. 1 Leonard, a wildcat, got under way last week and at latest report was drilling below 10-inch casing set at 1,391 feet.

Waskom Test

The Arkansas Louisiana Gas Co. No. 1 Jim Davis, in

(Continued on Page 129)



Globe Map Co., Shreveport

Midstates Oil Corp. No. 1 T. K. Giddens, southeast edge test in the Cotton Valley field of Webster Parish, coring for anticipated oil section of the Bodcaw sand after finding a good section of gas-distillate sand at 8,576-8,601 feet

Eastern Field Report

By STAFF CORRESPONDENT

Ravenswood, W. Va. to Have Oriskany Sand Wildcat Test

PITTSBURGH, Pa., May 8. — In Jackson County, West Virginia, Joe Rubin and others are rigging up a deep test on the Carson farm in Ravenswood district which is scheduled for the Oriskany sand. It is on the Ripley Quadrangle, 2.45 miles south of Latitude 39 degrees 00 minutes and 1.8 miles east of Longitude 81 degrees 45 minutes.

This test is 3.9 miles west of the 2,500,000-cu. ft. gas well on the D. P. Curry farm, which was completed in the Oriskany sand and about 2.9 miles north 70 degrees east of the 400,000 cu. ft. gas well on the W. J. Brown farm on the Ohio River north of Ravenswood, which was completed in the same formation.

In Grant district, Pleasants County, West Virginia, Columbian Carbon Co. is drilling at 5,100 feet in the test on the consolidation of the N. L. Ervin, Giles Hammat, and Edward Hammat heirs farm, or 98 feet in the Corniferous lime, which has a thickness of about 200 feet at this point. It should reach the Oriskany sand within the week.

SOUTHEAST OHIO

H. C. Hartley and others have a 2-bbl. well on the O. O. Baker farm in Section 31, Athens Township, Athens County, which was completed in the First Berea sand at 1,130 feet.

In Fraction 2, Canaan Township, Athens County, T. Wallace completed a 150,000-cu. ft. gas well on the Frank Hitt farm in the First Berea at 1,456 feet. In Section 12, Lodi Township, C. P. Bowman completed a gas well on the S. G. Lepoe farm in second Berea at 1,670 feet and it gauged 200,000 cu. ft. a day.

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In Calhoun County, Z. N. Connolly and others have started drilling on the Levi Morris farm in Sherman district, elevation 1,120 feet. McIntosh & Grimm had reached 1,350 feet in the John R. Lockney test.

In Clay County, Thompson Gas Co. made a location on the C. E. Lewis farm in Clay district, elevation 714.5 feet. In Otter district, Pittsburgh & West Virginia Gas Co. is down 860 feet in No. 7666 W. M. Duffield. In Pleasant district, Elk River Gas Co. is shut down at 3,545 feet at the J. S. Brown test. The Thompson Gas Co. is drilling at 200 feet and 270 feet in Nos. 13 and 14 Thompson Land & Coal Co.

In Gilmer County, W. H. Satterfield has material on the ground on the Ross Stern farm on Waggy Run of Kanawha River in DeKalb district, elevation 895 feet. McCall Drilling Co. is down 1,065 feet in No. 2 J. H. Houghton. In Center district, Calhoun County, W. H. Bickel is drilling at 1,688 feet in No. 2 J. W. Holbert.

In Pleasants County, O. J. Gabbert has started drilling No. 3 W. H. Naish in Grant district. In Ritchie County M & Y Oil Co. has a location for No. 4 Sada McGinnis in Clay district, elevation 890 feet. Mahaney & Lucas will drill a test on the O. R. Taylor farm, Clay district, elevation 963 feet. J. F. Deem and others have a rig up for No. 3 Mansfield Haught farm.

In Roane County, the Rodgers Properties Co. made a location for No. 3 Alfred Moore heirs in Curtis dis-

(Continued on Next Page)

Michigan Field Report

By
O. C. PRESSPRICH

Kent County Well Starts at 3,100 Barrels, Natural Flow

SAGINAW, Mich., May 8. — The Walker-Wyoming oil field, newly developing in Kent County, rose sharply in importance this past week with completion of two more big producing wells, one rated at 3,100 bbls. natural production daily, the other doing 1,000 bbls. a day.

On the other hand, as the southwestern Michigan areas continued to monopolize the state interests, Van Buren County set the pace in a big week for completions, reporting 17 of the 31 for the week. In that county, the Columbia Township field again overshadowed the Bloomingdale pool, so far as production was concerned.

Fifteen of the completed wells added 8,700 bbls. to the state's daily potential. Sixteen other tests were abandoned as dry holes and in the other case a location was given up.

Exceeded only by the Swanson Consolidated Oil Co. well completed a few weeks ago, Crown Development Co. No. 1 Rex Johnson, NW NW NE Section 5, in Walker Township of Kent County, was the center of attraction as it flowed 3,100 bbls. in the first 24 hours without indications of a letdown. Borough & Foster, Inc., acidized No. 1 Slykhouse, NE SE NW Section 5, to bring that well's output to 1,000 bbls. a day. In Kent County one other smaller producer was completed and two tests were abandoned.

In Van Buren County, the Columbia pool held to its lead gained in recent weeks over the Bloomingdale Township field. Five of Columbia's six completions were producers, being good for a total potential daily production of 3,100 bbls., while in Bloomingdale, there were 11 completions, 6 were dry holes and 5 were oil wells with a combined production of only 510 bbls. a day.

Three Dry Holes in One Section

Three of the Bloomingdale failures were in Section 24, where there was one peculiar development. W. H. Thouriby, drilling No. 1 A. J. Smith, NW SW NE, got what promised to be an excellent well at 1,365 feet. As the flow started hopes rose and in the first 24 hours the yield was 800 bbls. Then, as the finishing touches were being put on the well, water broke in in such quantity as to make the test worthless.

Biggest of the Columbia wells completed last week was J. W. McIntosh No. 1 Rex Henry, in Section 12. The completion, after acid treatment, was good for 1,500 bbls. a day. Ranking almost on a par with that well was the Rex Oil & Gas Co. No. 2 Vern Foster, which got 800 bbls. a day naturally in Section 11.

Dwindling prospects in the Allegan County pools were further emphasized as a completion in Hopkins and another in Salem Township were failures. In Overisel Township, Allegan, a 200-bbl. producer was recorded. Arenac County also had a failure in Arenac Township, and a wildcat test in Kalamazoo County's Oshtemo Township, also was abandoned. In the closely controlled Clare County area of Central Michigan, Charles W. Teater completed No. 5 Van Horn in Redding Township, getting a well good for 500 bbls., naturally, a day.

Recorded among the failures were two gas tests in Montcalm County, one an E. C. Daily venture in Ferris Township, the other drilled by Taggart Brothers, Inc., in Winfield.

While the past week's completion total was the biggest in months, the outlook for future activities in southwestern Michigan particularly was improved by the record number of 41 permits for new wells issued by the State Conservation Department.

Currently getting the biggest play, Columbia Township of Van Buren County was listed as the scene for 11 of the new tests. The extent to which the Columbia pool is overshadowing the Bloomingdale area was evidenced by the fact that the drilling permits for Bloomingdale numbered only three.

Growing interest also was reflected in the issuing of six more permits in Kent County. Others were issued as follows: Nine in Allegan County; three in the Redding pool in Clare County; two in Ottawa County, and one each in Clayton Township of Arenac County, Benton Township in Berrien and Winfield in Montcalm.

The following is the summary of the past week's Michigan completions:

Allegan County

Hopkins (3n-12w)—Bell & Marks, Inc., abandoned No. 1-B Archie Hendrixson, E half NE Section 23, as a dry hole at a total depth of 1,843 feet.

Overisel (4n-14w)—Koebel, Hazan and others were getting 200 bbls. natural flow a day from their No. 2 H. Busscher, SW NW NE Section 27. The well was completed at 1,470 feet.

Salem (4n-13w)—Black Rock Oil Co. No. 1 Peter Kipen, NW NE NE Section 23, was abandoned as a dry hole after drilling 1,598 feet.

Arenac County

Arenac (19n-5e)—Strange Oil & Gas Co. abandoned as dry No. 1 Peter Pietrowski, NW NW NW Sectoin 29, total depth 3,771 feet.

Clare County

Freeman (18n-6w) — Charles W. Teater completed No. 5 Van Horn, NE NW NE Section 3, at 3,898 feet. The well is good for 500 bbls. a day.

Kalamazoo County

Oshtemo (2s-12w)—A wildcat, Premier Oil Co. No. 1 Calvin C. Munson, NE NE NE Section 9, was dry and abandoned at 1,623 feet.

Kent County

Walker (7n-12w) — Importance of the new Kent County field increased considerably as a result of the week's developments. Borough & Foster, Inc., completed No. 1 Slykhouse, NE SE NW Section 5, getting production at a rate of 1,000 bbls. a day after acidizing the well, which was completed at a depth of 1,807 feet. The No. 1 Rex Johnson, NW NE NE Section 5, was several times bigger. Natural production of this completion, at a depth of 1,772 feet, was 3,100 bbls. daily. The well is owned by the Crown Development Co. The Gordon Oil Co. No. 2 Gavin, SE NW NW Section 5, was a dry hole, abandoned after being drilled to a depth of 1,938 feet. Voorhies Drilling Co. acidized No. 2 L. M. Story, NE SW SW Section 32, for 100 bbls. daily. The test went down 1,945 feet and the hole then was plugged back to 1,879 feet.

Wyoming (6n-12w)—A. S. Cochran and others abandoned as dry at 1,837 feet No. 1 Howard A. Chapin, S half NE SW Section 8.

Montcalm County

Ferris (11n-5w)—E. C. Daily No. 1 Sator & Eggleston, C NE Section 22, was abandoned at 1,128 feet.

Winfield (12n-9w)—Taggart Brothers, Inc., abandoned No. 9 Lowden & Waldo, C SW Section 16, at 1,140 feet. Both the Ferris and Winfield drillings were gas tests.

Van Buren County

Bangor (2s-16w)—Blood & Hendershott acidized No. 1 Elmer Jackson, SW SE SE Section 20, to get a production of 100 bbls. a day. Completion depth was 1,907 feet.

Bloomingdale (1s-14w)—No. 1 W. C. Kahl, SE SE SE Section 6, was abandoned by Mesel & Spielberg as the test still failed to show oil at a depth of 1,214 feet. Also dry and abandoned, after drilling 1,383 feet, was William P. Shoemaker No. 1-D Leonard Sage, SE SE SW Section 13. Jetter Drilling Co. completed No. 2 Frank Hense, NE NE NW Section 14, at 1,283 feet. Production, after acid treatment of the well, was 200 bbls. a day. Bridge Basin Oil Co. was getting 100 bbls. a day after acidizing No. 4 Ira Meek, NE SW NE Section 17, completed at 1,212 feet. In the same section, H. Brown Cannon, trustee, No. 3 Charles Babcock, SW NW NW, was a dry hole, abandoned at 1,260 feet. Weber Oil-Muskegon Development Co. completed No. 2 Michigan Central Railroad, NE NW NW Section 18, at 1,231 feet, production being 135 bbls. daily. Two other small wells also were completed in that section by Fisher & McCall. No. 1 Oliver Nelson, NE NW NW, completed at 1,186 feet, was acidized to 75 bbls. daily. Acid treatment of No. 2 Nelson, NW NE NW, increased production to 100 bbls. a day, the well's completion depth being 1,206 feet.

Section 24 was the scene of three failures. The Cannon, trustee, No. 2 Delbert Brown, NE SE NW, and No. 3 Brown, SE NE NW, were abandoned as dry holes at total depths of 1,353 and 1,360 feet, respectively, while W. H. Thouriby gave up No. 1 Arthur J. Smith, NW SW NE, at 1,355 feet.

Columbia (1s-15w)—Five of the six Columbia completions got production, two of them being particularly good. Rex Oil & Gas Co. completed No. 2 Vern Foster, NE SW NE Section 11, at 1,166 feet, getting a natural yield of 800 bbls. a day. Acidized, the J. W. McIntosh No. 1 Rex Henry, SW NW NW Section 12, completed at 1,179 feet, was producing 1,500 bbls. a day. Clapsaddle & Harri No. 2 Locker, SW SE SE Section 13, was good for 350 bbls. a day, natural flow, at 1,173 feet, and No. 1 C. R. Potter, SE NE NE Section 13, a Daily Crude Oil Co. well, was acidized to 50 bbls. a day. N. R. Dodd No. 1 A. W. DeRocher, NW NE NE Section 24, was abandoned at 1,240 feet as a dry hole. Clapsaddle & Harris No. 3 F. H. Benn, NW NE NW Section 24, was acidized on completion at 1,169 feet, and produced at 400 bbls. a day.

Pine Grove (1s-13w)—D. E. Foster abandoned location on the No. 1 Charles H. Allen, NW NE SW Section 19.

Eastern Fields

(Continued from preceding page)

trict, elevation 1,041.7 feet, and Nos. 1 and 2 on the L. M. and Goldie Riddle farm, same district, elevations 754 and 784 feet. In Geary district, C. W. Hickman is rigging up No. 2 Harold Anderson.

In Wetzel County, Manufacturers Light & Heat Co. has a location on the Frank J. Estep and others lease in Proctor district, elevation 1,374 feet. Here the Carnegie Natural Gas Co. has reached 1,200 feet in the Nancy J. Rush test.

In Wood County, Biddle, Gabbert and others started drilling on the E. E. and A. P. Anderson farm in Williams district. The Millinger Oil & Gas Co. was drilling at 800 feet on the John Marshall farm in Union district.

In Wayne County, Chartiers Oil Co. was drilling at 1,968 feet on the I. J. and W. Buskirk land in Butler district; Fraley Gas Co. at 2,963 feet in the V. A. Dickerson test in Union district; Muriel Gas Co. at 875 feet on the N. Stephenson and others land; R. J. Petry at 1,620 feet in the R. W. Ramey test.

In Mingo County, the Kermit Gas Corp. had reached 1,600 feet in the McCormick and others test in Kermit district. In Logan County, the Boone County Coal Corp. has the material in for No. 14 fee, in Logan district.

Eastern Field Report

By STAFF CORRESPONDENT

Ravenswood, W. Va. to Have Oriskany Sand Wildcat Test

PITTSBURGH, Pa., May 8. — In Jackson County, West Virginia, Joe Rubin and others are rigging up a deep test on the Carson farm in Ravenswood district which is scheduled for the Oriskany sand. It is on the Ripley Quadrangle, 2.45 miles south of Latitude 39 degrees 00 minutes and 1.8 miles east of Longitude 81 degrees 45 minutes.

This test is 3.9 miles west of the 2,500,000-cu. ft. gas well on the D. P. Curry farm, which was completed in the Oriskany sand and about 2.9 miles north 70 degrees east of the 400,000 cu. ft. gas well on the W. J. Brown farm on the Ohio River north of Ravenswood, which was completed in the same formation.

In Grant district, Pleasants County, West Virginia, Columbian Carbon Co. is drilling at 5,100 feet in the test on the consolidation of the N. L. Ervin, Giles Hammat, and Edward Hammat heirs farm, or 98 feet in the Corniferous lime, which has a thickness of about 200 feet at this point. It should reach the Oriskany sand within the week.

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New Work

In Braxton County, Pittsburgh & West Virginia Gas Co. made locations for No. 7680, or No. 3, on the S. B. Cook farm, elevation 1,332 feet, and Nos. 7678 and 7679, or Nos. 7 and 9, on the G. B. Howell farm in Birch district.

In Calhoun County, Z. N. Connolly and others have started drilling on the Levi Morris farm in Sherman district, elevation 1,120 feet. McIntosh & Grimm had reached 1,350 feet in the John R. Lockney test.

In Clay County, Thompson Gas Co. made a location on the C. E. Lewis farm in Clay district, elevation 714.5 feet. In Otter district, Pittsburgh & West Virginia Gas Co. is down 860 feet in No. 7666 W. M. Duffield. In Pleasant district, Elk River Gas Co. is shut down at 3,545 feet at the J. S. Brown test. The Thompson Gas Co. is drilling at 200 feet and 270 feet in Nos. 13 and 14 Thompson Land & Coal Co.

In Gilmer County, W. H. Satterfield has material on the ground on the Ross Stern farm on Waggy Run of Kanawha River in DeKalb district, elevation 895 feet. McCall Drilling Co. is down 1,065 feet in No. 2 J. H. Houghton. In Center district, Calhoun County, W. H. Bickel is drilling at 1,688 feet in No. 2 J. W. Holbert.

In Pleasants County, O. J. Gabbert has started drilling No. 3 W. H. Naish in Grant district. In Ritchie County M & Y Oil Co. has a location for No. 4 Sada McGinnis in Clay district, elevation 890 feet. Mahaney & Lucas will drill a test on the O. R. Taylor farm, Clay district, elevation 963 feet. J. F. Deem and others have a rig up for No. 3 Mansfield Haught farm.

In Roane County, the Rodgers Properties Co. made a location for No. 3 Alfred Moore heirs in Curtis dis-

(Continued on Next Page)

Michigan Field Report

By
O. C. PRESSPRICH

Kent County Well Starts at 3,100 Barrels, Natural Flow

SAGINAW, Mich., May 8. — The Walker-Wyoming oil field, newly developing in Kent County, rose sharply in importance this past week with completion of two more big producing wells, one rated at 3,100 bbls. natural production daily, the other doing 1,000 bbls. a day.

On the other hand, as the southwestern Michigan areas continued to monopolize the state interests, Van Buren County set the pace in a big week for completions, reporting 17 of the 31 for the week. In that county, the Columbia Township field again overshadowed the Bloomingdale pool, so far as production was concerned.

Fifteen of the completed wells added 8,700 bbls. to the state's daily potential. Sixteen other tests were abandoned as dry holes and in the other case a location was given up.

Exceeded only by the Swanson Consolidated Oil Co. well completed a few weeks ago, Crown Development Co. No. 1 Rex Johnson, NW NW NE Section 5, in Walker Township of Kent County, was the center of attraction as it flowed 3,100 bbls. in the first 24 hours without indications of a letdown. Borough & Foster, Inc., acidized No. 1 Slykhouse, NE SE NW Section 5, to bring that well's output to 1,000 bbls. a day. In Kent County one other smaller producer was completed and two tests were abandoned.

In Van Buren County, the Columbia pool held to its lead gained in recent weeks over the Bloomingdale Township field. Five of Columbia's six completions were producers, being good for a total potential daily production of 3,100 bbls., while in Bloomingdale, there were 11 completions, 6 were dry holes and 5 were oil wells with a combined production of only 510 bbls. a day.

Three Dry Holes in One Section

Three of the Bloomingdale failures were in Section 24, where there was one peculiar development. W. H. Thouriby, drilling No. 1 A. J. Smith, NW SW NE, got what promised to be an excellent well at 1,365 feet. As the flow started hopes rose and in the first 24 hours the yield was 800 bbls. Then, as the finishing touches were being put on the well, water broke in in such quantity as to make the test worthless.

Biggest of the Columbia wells completed last week was J. W. McIntosh No. 1 Rex Henry, in Section 12. The completion, after acid treatment, was good for 1,500 bbls. a day. Ranking almost on a par with that well was the Rex Oil & Gas Co. No. 2 Vern Foster, which got 800 bbls. a day naturally in Section 11.

Dwindling prospects in the Allegan County pools were further emphasized as a completion in Hopkins and another in Salem Township were failures. In Overisel Township, Allegan, a 200-bbl. producer was recorded. Arenac County also had a failure in Arenac Township, and a wildcat test in Kalamazoo County's Oshtemo Township, also was abandoned. In the closely controlled Clare County area of Central Michigan, Charles W. Teater completed No. 5 Van Horn in Redding Township, getting a well good for 500 bbls., naturally, a day.

Recorded among the failures were two gas tests in Montcalm County, one an E. C. Daily venture in Ferris Township, the other drilled by Taggart Brothers, Inc., in Winfield.

While the past week's completion total was the biggest in months, the outlook for future activities in southwestern Michigan particularly was improved by the record number of 41 permits for new wells issued by the State Conservation Department.

Currently getting the biggest play, Columbia Township of Van Buren County was listed as the scene for 11 of the new tests. The extent to which the Columbia pool is overshadowing the Bloomingdale area was evidenced by the fact that the drilling permits for Bloomingdale numbered only three.

Growing interest also was reflected in the issuing of six more permits in Kent County. Others were issued as follows: Nine in Allegan County; three in the Redding pool in Clare County; two in Ottawa County, and one each in Clayton Township of Arenac County, Benton Township in Berrien and Winfield in Montcalm.

The following is the summary of the past week's Michigan completions:

Allegan County

Hopkins (3n-12w)—Bell & Marks, Inc., abandoned No. 1-B Archie Hendrixson, E half NE Section 23, as a dry hole at a total depth of 1,843 feet.

Overisel (4n-14w)—Koebel, Hazan and others were getting 200 bbls. natural flow a day from their No. 2 H. Busscher, SW NW NE Section 27. The well was completed at 1,470 feet.

Salem (4n-13w)—Black Rock Oil Co. No. 1 Peter Kipen, NW NE NE Section 23, was abandoned as a dry hole after drilling 1,598 feet.

Arenac County

Arenac (19n-5e)—Strange Oil & Gas Co. abandoned as dry No. 1 Peter Pietrowski, NW NW NW Sectoin 29, total depth 3,771 feet.

Clare County

Freeman (18n-6w) — Charles W. Teater completed No. 5 Van Horn, NE NW NE Section 3, at 3,898 feet. The well is good for 500 bbls. a day.

Kalamazoo County

Oshtemo (2s-12w)—A wildcat, Premier Oil Co. No. 1 Calvin C. Munson, NE NE NE Section 9, was dry and abandoned at 1,623 feet.

Kent County

Walker (7n-12w) — Importance of the new Kent County field increased considerably as a result of the week's developments. Borough & Foster, Inc., completed No. 1 Slykhouse, NE SE NW Section 5, getting production at a rate of 1,000 bbls. a day after acidizing the well, which was completed at a depth of 1,807 feet. The No. 1 Rex Johnson, NW NE NE Section 5, was several times bigger. Natural production of this completion, at a depth of 1,772 feet, was 3,100 bbls. daily. The well is owned by the Crown Development Co. The Gordon Oil Co. No. 2 Gavin, SE NW NW Section 5, was a dry hole, abandoned after being drilled to a depth of 1,938 feet. Voorhies Drilling Co. acidized No. 2 L. M. Story, NE SW SW Section 32, for 100 bbls. daily. The test went down 1,945 feet and the hole then was plugged back to 1,879 feet.

Wyoming (6n-12w)—A. S. Cochran and others abandoned as dry at 1,837 feet No. 1 Howard A. Chapin, S half NE SW Section 8.

Montcalm County

Ferris (11n-5w)—E. C. Daily No. 1 Sator & Eggleston, C NE Section 22, was abandoned at 1,128 feet.

Winfield (12n-9w)—Taggart Brothers, Inc., abandoned No. 9 Lowden & Waldo, C SW Section 16, at 1,140 feet. Both the Ferris and Winfield drillings were gas tests.

Van Buren County

Bangor (2s-16w)—Blood & Hendershott acidized No. 1 Elmer Jackson, SW SE SE Section 20, to get a production of 100 bbls. a day. Completion depth was 1,007 feet.

Bloomingdale (1s-14w)—No. 1 W. C. Kahl, SE SE SE Section 6, was abandoned by Mesel & Spielberg as the test still failed to show oil at a depth of 1,214 feet. Also dry and abandoned, after drilling 1,383 feet, was William P. Shoemaker No. 1-D Leonard Sage, SE SE SW Section 13. Jetter Drilling Co. completed No. 2 Frank Hense, NE NE NW Section 14, at 1,283 feet. Production, after acid treatment of the well, was 200 bbls. a day. Bridge Basin Oil Co. was getting 100 bbls. a day after acidizing No. 4 Ira Meek, NE SW NE Section 17, completed at 1,212 feet. In the same section, H. Brown Cannon, trustee, No. 3 Charles Babcock, SW NW NW, was a dry hole, abandoned at 1,260 feet. Weber Oil-Muskegon Development Co. completed No. 2 Michigan Central Railroad, NE NW NW Section 18, at 1,231 feet, production being 135 bbls. daily. Two other small wells also were completed in that section by Fisher & McCall. No. 1 Oliver Nelson, NE NW NW, completed at 1,186 feet, was acidized to 75 bbls. daily. Acid treatment of No. 2 Nelson, NW NE NW, increased production to 100 bbls. a day, the well's completion depth being 1,206 feet.

Section 24 was the scene of three failures. The Cannon, trustee, No. 2 Delbert Brown, NE SE NW, and No. 3 Brown, SE NE NW, were abandoned as dry holes at total depths of 1,353 and 1,360 feet, respectively, while W. H. Thouriby gave up No. 1 Arthur J. Smith, NW SW NE, at 1,355 feet.

Columbia (1s-15w)—Five of the six Columbia completions got production, two of them being particularly good. Rex Oil & Gas Co. completed No. 2 Vern Foster, NE SW NE Section 11, at 1,166 feet, getting a natural yield of 800 bbls. a day. Acidized, the J. W. McIntosh No. 1 Rex Henry, SW NW NW Section 12, completed at 1,179 feet, was producing 1,500 bbls. a day. Clapsaddle & Harri No. 2 Locker, SW SE SE Section 13, was good for 350 bbls. a day, natural flow, at 1,173 feet, and No. 1 C. R. Potter, SE NE NE Section 13, a Daily Crude Oil Co. well, was acidized to 50 bbls. a day. N. R. Dodd No. 1 A. W. DeRocher, NW NE NE Section 24, was abandoned at 1,240 feet as a dry hole. Clapsaddle & Harris No. 3 F. H. Benn, NW NE NW Section 24, was acidized on completion at 1,169 feet, and produced at 400 bbls. a day.

Pine Grove (1s-13w)—D. E. Foster abandoned location on the No. 1 Charles H. Allen, NW NE SW Section 19.

Eastern Fields

(Continued from preceding page)

trict, elevation 1,041.7 feet, and Nos. 1 and 2 on the L. M. and Goldie Riddle farm, same district, elevations 754 and 784 feet. In Geary district, C. W. Hickman is rigging up No. 2 Harold Anderson.

In Wetzel County, Manufacturers Light & Heat Co. has a location on the Frank J. Estep and others lease in Proctor district, elevation 1,374 feet. Here the Carnegie Natural Gas Co. has reached 1,200 feet in the Nancy J. Rush test.

In Wood County, Biddle, Gabbert and others started drilling on the E. E. and A. P. Anderson farm in Williams district. The Millinger Oil & Gas Co. was drilling at 800 feet on the John Marshall farm in Union district.

In Wayne County, Chartiers Oil Co. was drilling at 1,968 feet on the I. J. and W. Buskirk land in Butler district; Fraley Gas Co. at 2,963 feet in the V. A. Dickerson test in Union district; Muriel Gas Co. at 875 feet on the N. Stephenson and others land; R. J. Petry at 1,620 feet in the R. W. Ramey test.

In Mingo County, the Kermit Gas Corp. had reached 1,600 feet in the McCormick and others test in Kermit district. In Logan County, the Boone County Coal Corp. has the material in for No. 14 fee, in Logan district.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, May 6.—Crude production from all Alberta fields in March totaled 366,898 bbls., daily average 11,836 bbls., compared with 340,107 bbls. in February, daily average 12,145 bbls.

Red Coulee light crude increased from 1,092 to 1,172 bbls. Wainwright heavy crude was down from 1,220 to 748 bbls. Dina heavy crude increased from 324 to 384 bbls. The March output from Plains No. 2 in the Taber field was 1,126 bbls. against 2,594 bbls. in February.

Allowables Are Increased

Effective May 2, the Alberta Conservation Board increased aggregate allowables for Turner Valley crude producers from 17,500 to 19,500 bbls. a day. The last previous increase, on April 1, was from the winter figure of 10,000 bbls. to 17,500 bbls. With recent completions the field potential is estimated around 61,000 bbls.

Under the new schedule, Royalite No. 38, the largest producer, is reduced from 567 to 565 bbls. Other major producers are: Home No. 2 Millarville, 538 bbls.; Royal Canadian No. 2, 514 bbls.; Vulcan Brown No. 1, 509 bbls.; Royalite No. 36, 470 bbls.; Extension Royalties No. 1, 462 bbls.; Sundance Royalties No. 1, 459 bbls.; Anglo-Canadian No. 3, 442 bbls.; Frontier Royalties No. 1, 434 bbls.; Sunset Oils No. 1, 434 bbls.; York Oils No. 1, 429 bbls.; Commoil No. 1, 426 bbls.; Royalite No. 30, 426 bbls, and Prairie Royalties No. 1, 416 bbls. Royalite No. 35, recently completed, is increased from the tentative figure of 294 bbls. to 323 bbls. Only three crude producers are below the 100-bbl. figure. The schedule lists 72 crude producers.

South End Producer

In the south end of the crude area, George Harris & Associates No. 1, LSD 13, Section 9-18-2w5, finished 455 feet in the Madison at a total depth of 7,445 feet, will probably be a major producer. The lower zone was very porous and the well after cleaning flowed around 60 bbls. an hour. It is being acidized in both lower and upper porous zones, and will test for official allowable. Location is immediately east of Royalite No. 38, the largest producer in the field.

East Crest in Lime

In West Central Turner Valley, East Crest Oil Co. No. 4, LSD 8, Section 6-19-2w5, is below 7,757 feet after getting the Madison limestone at 7,540 feet. It will be the next completion, and results here, somewhat west of the proven area, will give considerable information as to the possibilities to the west and north.

West of the main field, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, is swabbing, and looks like a small producer in the upper lime.

West Central Area

In Section 7-19-2w5, Valley Drilling Co. No. 1, LSD 11, is resuming from 380 feet after cleaning out and recementing.

In Section 18-19-2w5, Davolite Oil Co. No. 1, LSD 10, is standing cemented at 1,880 feet.

West Side Drilling

In Section 32-18-2w5, Vantage Oils No. 1, LSD 12, is deepening after setting 13⅜-inch casing around 1,700 feet. British Colonial Oils No. 1, LSD 5, is below 7,325 feet and getting into the Home sand. Royalite Oil Co. No. 42, LSD 4, is rigged ready to spud.

In Section 20-18-2w5, York Oils No. 2, LSD 6, is below 7,451 feet and getting close to the Fernie shales, after getting the brown sand at 7,290 feet.

In Section 17-18-2w5, Royalite Oil Co. No. 41, LSD 1, is below 1,414 feet.

In Section 5-18-2w5, Theo Grewer No. 1, LSD 14, is in the Belly River formation below 675 feet.

West of the main field, Anglo-Canadian Oil Co. No. 5, LSD 8, Section 31-18-2w5, has resumed after a fishing job at 7,350 feet. Scottish Petroleums No. 1, LSD 16, Section 19-18-2w5, is in the Blairmore formation below 7,285 feet.

New Anglo-Canadian Tests

Anglo-Canadian Oil Co. of Calgary is sponsoring two new tests in Turner Valley. Argus Royalties No. 1 will be drilled on acreage leased from Calgary & Edmonton Corp. in LSD 14, Section 25-19-3w5. Drilling will be handled by Drilling Contractors, Ltd., under joint agreement with Pacific Petroleums, Ltd., of Vancouver, Anglo-Canadian Oil Co. and interests associated with the Osler, Hammond & Nanton Co. of Winnipeg. Location is about a mile west and slightly north of Dalhousie Oil Co. No. 8, which was apparently too far east to get production. The area west of the Dalhousie well is in line with crude production farther south, and a strike here would prove an important extension of the field. Rotary outfit from Anglo-Canadian No. 1 Twin Dome has been moved to location.

Anglo-Canadian Oil Co. No. 7 has been located in Section 31-18-2w5, offsetting Royalite Oil Co. No. 36 producer to the west. Drilling will be handled by Drilling Contractors, Ltd., and equipment is already on the ground.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 43 has been spotted in LSD 2, Section 22-20-3w5, offsetting Model Oils No. 3 to the west. Location is about a mile south of Royalite No. 35 producer and 2 miles south and a little east of Home Oil Co. No. 2 Millarville. The test will spud early this month.

Farther north and west, National Petroleum Corp. No. 3 has spudded in LSD 4, Section 25-20-4w5. Location is in the Waite Valley area, 3 miles west of Home No. 2 Millarville, and close to Richfield Petroleums No. 1 which in 1930 was drilled to 4,785 feet but discontinued before reaching the Madison. It was in the Blairmore formation when abandoned, and had encountered several shows of crude.

Far South Project

Commonwealth Petroleums, Ltd., has acquired 80 acres in Section 32-17-2w5, in return for 22,000 shares of treasury stock. The acreage, in LSDs 1 and 8, also carries 5 per cent royalty to the vendors. The acreage is less than a mile west of Davies Petroleums No. 3 in LSD 7, Section 33-18-2w5, standing at 3,250 feet; and is in line with Royalite No. 38, the largest producer in the field.

Northern Foothills

On the Grease Creek structure west of Olds, Grease Creek-Northwest Co. No. 1, LSD 2, Section 13-29-7w5, is below 2,660 feet, drilling and carrying casing.

On the Clearwater structure, 85 miles west of Innisfail, Altoba No. 1, Section 31-34-9w5, is shut down at 2,300 feet after encountering some shows of oil and gas in the Devonian below 2,200 feet.

Southern Foothills

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-3w5, is in very hard formation below 6,908 feet, some 1,548 feet below the Madison contact.

On the Savannah Creek structure, the Anglo-Canadian Oil Co. No. 1, SW quarter Section 20-14-4w5, is below 530 feet and expected to get the Devonian limestone around 825 feet.

Steveville Operations

In the Steveville area, about 120 miles east of Calgary, Anglo-Canadian Oil Co. No. 2, LSD 4, Section 14-20-11w4, cemented casing at 3,252 feet, in the top of the Madison. The drill pipe test showed between 3,000,000 and 5,000,000 cu. ft. of gas with fair shows of sweet black crude. It will be drilled into production early in May, after which the outfit will be moved to Anglo-Canadian No. 1, LSD 2, Section 13-21-12w4, standing cemented at 3,178 feet in the top of the Madison.

Anaconda Oil Co. has let contract for completion of its No. 1 well, LSD 15, Section 9-22-12w4, to Clancy & Muir. Rotary outfit will be used and 6⅝-inch hole carried to the lime from 2,420 feet with the Madison expected around 3,000 feet.

Border Fields

In the Barnwell area, Border Petroleums No. 1, LSD 5, Section 32-19-17w4, is deepening in hard formation below 3,308 feet after cementing casing for water shutoff. A gas flow estimated at 5,000,000 cu. ft. a day, with a noncommercial show of crude, was met in the Sunburst sand around 3,251 feet, with water intrusion at 3,282 feet. The test will be deepened to the Ellis formation.

In the Cardston area, Franco Oils No. 1, LSD 3, Section 5-3-25w4, is running casing preparatory to deepening from 4,580 feet. At the company's annual meeting recently, Walter F. Thorn was elected president and J. S. Smith of Cardston vice president.

On the Del Bonita structure, Terminal Oil Co. No. 1, NE quarter Section 18-1-21w4, is taking some production from the lime after perforating casing. Terminal No. 2, NW quarter Section 7-1-21w5, standing at 175 feet, may be completed this season, or a new well started.

Alberta operators are interested in the results of two tests now starting in a northerly extension of the Cut Bank field about 3½ miles south of the international boundary and immediately south of the international Red Coulee field. A. B. Cobb has a location in Section 17-37-4w, and K. D. Pardee will drill in Section 24-37-5w. Results will have a considerable bearing on development work in nearby southern Alberta areas.

Rocky Mountain Runs

Production estimates for the week ended May 6:

WYOMING

	Barrels
Salt Creek	14,520
Big Muddy	1,210
Dallas Derby	530
Elk Basin	590
Frannie	780
Garland	1,820
Grass Creek	4,160
Hamilton Dome	1,680
LaBarge	790
Lance Creek	14,560
Lost Soldier	1,990
Medicine Bow	2,060
Oregon Basin	2,270
Osage	800
Quealy Dome	630
Rock River	3,050
Wertz	1,520
Miscellaneous	1,370
Total Wyoming	54,330

MONTANA

Border	60
Cat Creek	560
Cut Bank	8,580
Dry Creek	1,090
Kevin-Sunburst	3,710
Pondera	580
Total Montana	14,580

COLORADO

Florence	210
Ft. Collins and Wellington	300
Wilson Creek	240
Iles Dome	2,020
Moffat	260
Orchard	30
Rangely	70
Tow Creek	160
Price	290
Total Colorado	3,580

NEW MEXICO

Cooper	4,470
Eaves	900
West Eunice	110
Eunice	24,690
Hardy	3,540
Hobbs	13,880
Jal	740
Langlie	5,670
Lynch	550
Lynn	820
Mattix	4,310
Monument	25,490
North Lynch	40
Penrose	5,890
Rhoades	140
Skaggs	90
Skelly	1,900
South Eunice	3,860
South Lovington	220
Vacuum	9,660
Artesia-Maljamar	8,990
Getty	100
Hogback	200
Rattlesnake	580
Table Mesa	80
Total New Mexico	116,920
Total Rocky Mountain region	189,410

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Mar. 31, 1939	Feb. 28, 1939	March changes	Dec. 31, 1938 (reclassified)
1. Gasoline-bearing crude	39,215,749	38,353,224	+862,525	36,225,312
2. Nongasoline-bearing crude	15,808,425	16,351,774	—543,349	16,282,177
3. Unblended natural gasoline	2,137,837	2,290,365	—152,528	2,699,455
4. Gasoline (not including distributing and service stations)	15,805,417	15,040,909	+764,508	13,259,369
5. Naphtha distillates	*1,384,449	*1,566,651	—182,202	*1,566,349
6. Gas oil and Diesel oil	10,382,404	10,632,151	—249,747	10,539,937
7. Fuel oil residuum	70,551,947	70,773,179	—221,232	70,957,881
8. All other stocks	†6,306,740	†6,109,390	+197,350	†6,153,809
Total	161,592,968	161,117,643	+475,325	157,684,289
*Estimated amount of unfinished gasoline contained in Item 5	1,184,846	1,333,333	.....	1,350,379
†Coke included in Item 8	189,832	156,248	.....	92,066

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S. T. R.	Depth	Status—
Richfield Oil, No. 1 Tinaquaic, Foxen Can., S. B.	36- 9-32	5,560	hd. sh. drlg.
Petrol Corp., No. 32-A Tognazzini, Gato Ridge, S. B.	9- 8-32	2,950	P.B. 1,200
Arnold, E. C., No. 2 Careaga, Los Alamos, Santa Barb	8- 8-33	6,591	sd. sh. drlg.
United West. Oil, No. 1 Los Olivos, Santa Barbara	16- 7-30	3,570	sd. sh. drlg.
Richfield Oil, No. 1 Marcos, Sisquoc, Santa Barbara	20- 6-29	1,499	sd. sh. drlg.
Litho Oil, No. 1 R. I. E., Capitan, Santa Barbara	5- 4-30	2,960	sd. sh. drlg.
General Pet., No. 4 More, Goleta, Santa Barbara	15- 4-28	1,094	sd. sh. drlg.
Glenray Oil, No. 1 Williams, Summerland, S. B.	1- 4-26	200	sd. sh. drlg.
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,920	O.S. drlg.
Ivers, H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	1,392	sd. sh. drlg.
Section 20 Oil, No. 21, Sespe, Ventura	20- 5-19	2,660	sd. sh. drlg.
English, J. A., No. 1 Lankershim, Hopper Can., Vent.	13- 4-19	728	sd. sh. drlg.
Shomy Oil, No. 1 Hill, Bardsdale, Ventura	32- 4-19	731	sd. sh. drlg.
Levesque, G. M., No. 1 Robertson, Simi, Ventura	17- 2-18	1,572	sd. sh. drlg.
Galveston Oil, No. 1 Basola, Bardsdale, Ventura	5- 3-19	2,220	sd. sh. drlg.
Texas Co., No. 137 Shields, Shields Canyon, Ventura	4- 3-19	1,198	sd. sh. drlg.
El Rancho Oil, No. 3 Elkins, Shields Canyon, Ventura	9- 3-19	1,390	sd. sh. drlg.
Continental Oil, No. 11 Grubb, San Miguelito, Vent.	24- 3-24	4,481	sd. sh. drlg.
C. C. M. Oil, No. 7-A Hobson, Padre Canyon, Ventura	15- 3-24	5,750	fish D.P.
C. C. M. Oil, No. 27-B Hobson, Rincon, Ventura	16- 3-24	3,980	br. sh. drlg.
Tide Water A. O., No. 34 V.L.W., Ventura Ave., Vent.	24- 3-23	4,472	sd. sh. drlg.
Tide Water A. O., No. 40 V.L.W., Ventura Ave., Vent.	25- 3-23	9,672	O.S. drlg.
Tide Water A. O., No. 14 McGonigle, Vent. Ave., Vent.	23- 3-23	7,761	hd. sh. drlg.
Tide Water A. O., No. 77 Lloyd, Vent. Ave., Vent.	27- 3-23	9,865	O.S. drlg.
Tide Water A. O., No. 123 Lloyd, Vent. Ave., Vent.	27- 3-23	8,610	sd. sh. drlg.
Tide Water A. O., No. 124 Lloyd, Vent. Ave., Vent.	23- 3-23	7,360	sd. sh. drlg.
Tide Water A. O., No. 8 Hartman, Vent. Ave., Vent.	22- 3-23	8,200	reaming
Shell Oil, No. 98 Taylor, Ventura Ave., Ventura	21- 3-23	8,230	O.S. drlg.
Shell Oil, No. 99 Taylor, Ventura Ave., Ventura	29- 3-23	900	idle
Shell Oil, No. 33 Edison, Ventura Ave., Ventura	28- 3-23	8,290	reaming
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Vent.	22- 3-23	7,899	fish reamer
Lloyd Corp., No. 2 Dabney, Ventura Ave., Ventura	23- 3-23	9,813	redrlg. 8,932
Auman, Allen, No. 1 Theta, Lost Hills, Kern	12-26-20	966	sd. sh. drlg.
Belridge Oil, No. 35-38, North Belridge, Kern	35-27-20	5,680	sd. sh. drlg.
Belridge Oil, No. 36-39, North Belridge, Kern	36-27-20	8,275	flow 810 b.d.
Belridge Oil, No. 28-16, North Belridge, Kern	28-27-20	8,000	sd. sh. drlg.
Tide Water A. O., No. 21, North Belridge, Kern	21-27-20	2,294	sd. sh. drlg.
Richfield Oil, No. 3 Belridge, North Belridge, Kern	22-27-20	7,569	redrlg. 5,451
Honolulu Consd., No. 63 Michelssen, Belridge, Kern	14-28-20	1,335	will abdn.
Atlas Pet., No. 1 Moore, Delano, Kern	7-25-25	3,802	P.B. 3,450
Dilamar Oil, No. 3 Quinn, Jasmin, Kern	15-25-27	2,902	O.S. drlg.
C. C. M. Oil, No. 1 Rufener, Round Mountain, Kern	2-29-29	2,098	gr. sd.; abd.
Grizzly Bear Oil, No. 2 Kelley, Round Mountain, Kern	6-28-29	1,705	bailing
Crestmont Oil, No. 1 Coffe, Round Mountain, Kern	8-28-29	1,420	rig to pump
Combs Bros., No. 2 Kern, Kern River, Kern	28-28-28	406	idle
Hast Oil, No. 5 Kern, Kern River, Kern	34-28-28	510	will deepen
Italo Pet., No. 1 Judkins, Kern River, Kern	19-28-28	1,215	no fluid
Little & Gilstrap, No. 2 Keating, Premier, Kern	20-27-27	2,458	will P.B
Wright & Eyer, No. 1 Dome, Mount Poso, Kern	28-26-28	1,509	O.S. drlg.
Ring Oil, No. 1 Blackfoot, Mount Poso, Kern	22-26-28	1,294	sd. sh. drlg.
Ring Oil, No. 8 Bowles, Mount Poso, Kern	29-26-28	1,816	rig to pump
Texas Co., No. 1 Jewett, Arvin, Kern	16-31-29	4,870	sd. sh. drlg.
Universal Cosd., No. 1 Derby, Arvin, Kern	15-31-29	4,866	sd. sh. drlg.
Western Gulf Oil, No. 1 Bellevue, Fruitvale, Kern	34-29-27	3,931	O.S. drlg.
Smith, H. G., No. 1 Galtes, Fruitvale, Kern	14-29-27	2,571	sd. sh. drlg.
Standard Oil, No. 8-2-B, KCL, Wasco, Kern	17-27-24	13,128	O.S. drlg.
Union Oil, No. 1-36, KCL, Shafter, Kern	36-27-24	12,956	sd. sh. drlg.
Cal. Expl., No. 1 Dougherty-Salisbury, Buttonw., Kern	7-29-24	12,871	formation test
General Pet., No. 2 Van Ness, Rio Bravo, Kern	2-29-25	9,080	sd. sh. drlg.
Union Oil, No. 8-34, KCL, Rio Bravo, Kern	34-28-25	10,270	sd. sh. drlg.
Superior Oil, No. 1 Moodie, Rio Bravo, Kern	26-28-25	10,490	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,900	flow salt water
Standard Oil, No. 11-16, KCL, Greeley, Kern	20-29-26	11,515	sd. sh. drlg.
Standard Oil, No. 11-17, KCL, Greeley, Kern	18-29-26	11,390	O.S. drlg.
Standard Oil, No. 11-18, KCL, Greeley, Kern	18-29-26	6,271	sd. sh. drlg.
Standard Oil, No. 12-6, KCL, Greeley, Kern	30-29-26	10,751	br. sh. drlg.
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-26	13,538	fish D.P.
Continental Oil, No. 2-D, KCL, Bellvue, Kern	14-30-26	4,782	fish D.P.
Shell Oil, No. 2-28-B, KCL, Ten Section, Kern	28-30-26	8,220	O.S. drlg.
Shell Oil, No. 36-14-A, KCL, Canal, Kern	14-30-25	6,991	sd. sh. drlg.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	13,830	sd. sh. drlg.
Tide Water A. O., No. 35-E, KCL, North Canal, Kern	7-30-26	7,671	sd. sh. drlg.
Ohio Oil, No. 12-E, KCL, Canal, Kern	14-30-25	134	sd. sh. drlg.
Standard Oil, No. 21-1, KCL, Tupman, Kern	19-30-25	6,485	sd. sh. drlg.
Richfield Oil, No. 14-3-13, KCL, Coles Levee, Kern	3-31-25	5,781	sd. sh. drlg.
Tide Water A. O., No. 61, KCL, Coles Levee, Kern	14-31-25	8,555	sd. sh. drlg.
Standard Oil, No. 20-1, KCL, Coles Levee, Kern	9-31-25	8,817	sd. sh. drlg.
Ohio Oil, No. 2-F, KCL, Coles Levee, Kern	10-31-25	9,780	swabbing
Premier-Padran Oil, No. 1 Sunset, Midway-Sun., Kern	25-32-23	1,737	pump water
Vista Grande Oil, No. 1 Schultz, Midway-Sunset, Kern	36-32-23	3,630	cleaning out
Van Fleet & Durkee, No. 3 Hoyst. Midway-Sun., Kern	36-32-23	2,698	P.B. 2,510
General Pet., No. 1 B.V.A., Midway-Sunset, Kern	1-32-24	3,687	sd. sh. drlg.
Manley & McGinn, No. 15 Midway, Midway-Sun., Kern	15-31-22	911	sd. sh. drlg.
Par Oil & Gas, No. 1 Hager, Midway-Sunset, Kern	16-31-22	1,090	sd. sh. drlg.
Gates, F. E., No. 2 Laymance, McKittrick, Kern	20-30-22	961	sd. sh. drlg.
Robertson, E. D., No. 1 Smith, McKittrick, Kern	13-30-21	902	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	10,284	sd. sh. drlg.
Continental Oil, No. 1-F, KCL, San Emidio, Kern	5-10-21	1,641	sd. sh. drlg.
Shell Oil, No. 8-32-1-A, KCL, San Emidio, Kern	32-11-22	4,870	dry; abd.
Shell Oil, No. 48-30 Port Costa, Turk, Fresno	30-17-16	6,478	sd. sh. drlg.
Stuart Oil, No. 1 Hill, W. Coalinga, Fresno	12-21-14	1,410	bail water
Tyler & Cornwell, No. 4 Tyler, W. Coalinga, Fresno	14-20-14	302	P.B. 280
Raco Oil, No. 1 Smith, W. Coalinga, Fresno	3-20-14	991	sd. sh. drlg.
Rylatt, Harry, No. 3 Kipling, W. Coalinga, Fresno	26-20-14	1,310	idle
Petseahon, No. 31-7-F, S.E. Coalinga, Fresno	7-20-16	6,792	O.S. drlg.
Petseahon, No. 62-7-F, S.E. Coalinga, Fresno	7-20-16	7,330	sd. sh. drlg.
Petseahon, No. 3-18-F, S.E. Coalinga, Fresno	18-20-16	6,826	hd. sd. drlg.
Texas Co., No. 1 Exeter fee, S.E. Coalinga, Fresno	6-20-16	7,171	sd. sh. drlg.
Standard Oil, No. 73-13-C, S.E. Coalinga, Fresno	13-20-15	6,831	br. sh. drlg.
Superior Oil, No. 6 fee, S.E. Coalinga, Fresno	7-20-16	6,825	sd. sh. drlg.
Superior Oil, No. 2 Cagle, S.E. Coalinga, Fresno	6-20-16	5,780	sd. sh. drlg.
K. N. D. A., No. 54-24-H, Kettleman North, Fresno	24-21-16	10,807	recmtd. 10,790
K. N. D. A., No. 47-16-Q, Kettleman North, Kings	16-22-18	7,855	flow 4,400 b.d.
K. N. D. A., No. 4-18-Q, Kettleman North, Kings	18-22-18	6,635	cmtd. 6,634
K. N. D. A., No. 2-20-Q, Kettleman North, Kings	20-22-18	5,391	sd. sh. drlg.
K. N. D. A., No. 6-22-Q, Kettleman North, Kings	22-22-18	7,925	C.P. 7,400
K. N. D. A., No. 58-22-Q, Kettleman North, Kings	22-22-18	5,965	br .sh. drlg.
Standard Oil, No. 61-11-P, Kettleman North, Kings	11-22-17	7,666	flow 40 b.d.
Standard Oil, No. 87-7-Q, Kettleman North, Kings	7-22-18	4,395	sd. sh. drlg.
Standard Oil, No. 52-17-Q, Kettleman North, Kings	17-22-18	6,460	br. sh. drlg.
Standard Oil, No. 74-17-Q, Kettleman North, Kings	17-22-18	7,150	hd. sh. drlg.
Standard Oil, No. 85-17-Q, Kettleman North, Kings	17-22-18	3,594	sd. sh. drlg.
Standard Oil, No. 81-19-Q, Kettleman North, Kings	19-22-18	7,005	hd. sd. drlg.
Standard Oil, No. 41-21-Q, Kettleman North, Kings	21-22-18	6,994	cmtd. 6,873
Standard Oil, No. 72-21-Q, Kettleman North, Kings	21-22-18	5,783	br. sh. drlg.
Standard Oil, No. 83-21-Q, Kettleman North, Kings	21-22-18	7,398	sd. sh. drlg.
Cal. Pet. Prod., No. 1 Irons, Cuyama, San Luis Obispo	19-10-24	2,220	reaming
Epco, Inc., No. 1 Cuyama, Creston, San Luis Obispo	27-27-13	5,180	deepening
Newton, S. M., No. 1 Stafford, Panorama, S. L. Obispo	18-21-21	2,697	sd. sh. drlg.
Texas Co., No. 1 Arroyo Seco, Greenfield, Monterey	11-19- 5	3,397	sd. sh. drlg.
Amal. O. & G., No. 6 Konda, Richgrove, Tulare	23-24-27	455	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S. T. R.	Depth	Status—
A. B. C. Oil, No. 1 Angelich, Torrance, Los Angeles	23- 4-14	5,165	rig to pump
Calusa Oil, No. 1 Starkey, Torrance, Los Angeles	23- 4-14	5,165	flow 170 b.d.
Deep Hope Drlg., No. 2 Kovell, Torrance, L. A.	23- 4-14	4,975	pump 20 b.d.
F. S. D. Oil, No. 1 Willacy, Torrance, Los Angeles	23- 4-14	5,195	P.B. 3,710
Kildumac Oil, No. 1 Mitchell, Torrance, Los Angeles	23- 4-14	4,871	resume work
Lone Star Drlg., No. 2 Pestor, Torrance, Los Angeles	23- 4-14	5,170	O.S. drlg.
Packard Oil, No. 1 Louden, Torrance, Los Angeles	23- 4-14	2,996	sd. sh. drlg.
Packard Oil, No. 1 Pollard, Torrance, Los Angeles	23- 4-14	5,138	pump 160 b.d.
Plymouth Oil, No. 3 Lomita, Torrance, Los Angeles	23- 4-14	5,155	pump 110 b.d.
Standard Oil, No. 1-11 Marble, Torrance, L. A.	22- 4-14	4,598	sd. sh. drlg.
Shadle Pet., No. 1 Kettler, Torrance, Los Angeles	23- 4-14	5,090	test wet
Vesta Pet., No. 2 Bruhn, Torrance, Los Angeles	23- 4-14	5,155	flow 361 b.d.
C. C. M. O., No. 49 Lomita, Torrance, Los Angeles	15- 4-14	4,998	flow 201 b.d.
C. C. M. O., No. 12 Kettler, Torrance, Los Angeles	14- 4-14	3,825	rigged up
General Pet., No. 7 Poggi, Harbor City, Los Angeles	23- 4-14	3,800	redrlg. 3,770
Union Oil, No. 67 Callender, Dominguez, Los Angeles	33- 3-13	7,799	P.B. 7,235

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd. cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill stem test.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., owell drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng.,) running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing)
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C., or W.O.C.S., waiting on cement to set.
W.O.O., waiting for orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Union Oil, No. 68 Callender, Dominguez, Los Angeles	32-	3-13	3,996	sd. sh. drlg.
Union Oil, No. 11 Carson, Dominguez, Los Angeles	33-	3-13	8,608	P.B. 8,500
Shell Oil, No. 27-A Reyes, Dominguez, Los Angeles	34-	3-13	4,265	sd. sh. drlg.
Shell Oil, No. 98 Reyes, Dominguez, Los Angeles	33-	3-13	2,268	sd. sh. drlg.
Universal Consd., No. 15 Trust, Rosecrans, L. A.	18-	3-13	7,817	O.S. drlg.
Royalty Ser. Corp., No. 3 Cordon, Rosecrans, L. A.	19-	3-13	7,827	reaming
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles	19-	3-13	7,653	redrlg. 6,181
Howard Oil, No. 1 H.O., Rosecrans, Los Angeles	20-	3-13	6,294	sd. sh. drlg.
Wilshire Oil, No. 1 Leitch, Rosecrans, Los Angeles	19-	3-13	4,998	sd. sh. drlg.
Marion, J. H., No. 2 Athens, Rosecrans, Los Angeles	19-	3-13	7,182	sd. sh. drlg.
Beloil Corp., No. 1 Castleberry, Potrero, Los Angeles	28-	2-14	5,450	fish csg.
Standard Oil, No. 1 Ward, Aliso Canyon, L. A.	27-	3-16	5,830	O.S. drlg.
Union Oil, No. 1-27 Orcutt, Aliso Canyon, L. A.	27-	3-16	5,177	sd. sh. drlg.
Mangrum & Page, No. 1 Lintz, Newhall, Los Angeles	4-	3-15	400	sd. sh. drlg.
O'Donnell, J. E., No. 1 Hammond, Newhall, L. A.	8-	3-16	4,639	fish D.P.
General Pet., No. 48 Harbor, Wilmington, L. A.	2-	5-13	2,980	O.S. drlg.
General Pet., No. 15 S.P., Wilmington, Los Angeles	2-	5-13	4,060	flow 1,002 b.d.
Allied Pet., No. 32 Harbor, Wilmington, Los Angeles	35-	4-13	3,408	flow 200 b.d.
Hollywood Oil, No. 6 Baxter, Wilmington, L. A.	35-	4-13	3,050	sd. sh. drlg.
Padreson Oil, No. 55-2-D Harbor, Wilmington, L. A.	32-	4-13	3,670	flow 420 b.d.
Signal O. & G., No. 1 Allen, Wilmington, Los Angeles	2-	5-13	4,330	cleaning out
Signal O. & G., No. 1-C.D., Newport, Wilmington, L. A.	2-	5-13	3,680	sd. sh. drlg.
Signal O. & G., No. 2-C.D., Newport, Wilmington, L. A.	2-	5-13	2,776	sd. sh. drlg.
Superior Oil, No. 1 Seaside, Wilmington, Los Angeles	2-	5-13	4,990	sd. sh. drlg.
Union Pacific R.R., No. 106, Wilmington, Los Angeles	34-	4-13	4,078	O.S. drlg.
Union Pacific R.R., No. 109, Wilmington, Los Angeles	3-	5-13	2,181	sd. sh. drlg.
Union Pacific R.R., No. 15-E, Wilmington, L. A.	34-	4-13	3,244	flow 110 b.d.
Union Pacific R.R., No. 17-E, Wilmington, L. A.	3-	5-13	2,550	sd. sh. drlg.
Ridge Oil, No. 1 Club, Montebello, Los Angeles	3-	2-12	5,687	sd. sh. drlg.
St. Helens Pet., No. 25 Monterey, Montebello, L. A.	2-	2-12	5,789	will deepen
St. Helens Pet., No. 2 Eggleston, Montebello, L. A.	2-	2-12	7,171	O.S. drlg.
St. Helens Pet., No. 2 Taylor, Montebello, L. A.	2-	2-12	6,250	fish liner
Standard Oil, No. 3 Braun, Montebello, Los Angeles	2-	2-12	7,135	C.P. 7,005
Standard Oil, No. 4 Harvey, Montebello, Los Angeles	2-	2-12	6,673	milling 6,330
Standard Oil, No. 5 Whitehead, Montebello, L. A.	3-	2-12	7,050	hd. sd. drlg.
Standard Oil, No. 6 Whitehead, Montebello, L. A.	3-	2-12	5,664	sd. sh. drlg.
Union Oil, No. 2 Wilcox, Montebello, Los Angeles	2-	2-12	7,160	sd. sh. drlg.
Union Oil, No. 2 Howard & Smith, Montebello, L. A.	2-	2-12	5,513	cleaning out
Union Oil, No. 5 Howard & Smith, Montebello, L. A.	2-	2-12	3,672	sd. sh. drlg.
Stanley Oil, No. 1 Montebello, Montebello, L. A.	2-	2-12	7,010	redrlg. 4,785
Mont. Wesco, Inc., No. 1 Montebello, Montebello, L.A.	2-	2-12	6,693	will deepen
Mont. Reservoir Oil, No. 2 Water, Montebello, L. A.	2-	2-12	6,330	sd. sh. drlg.
Texas Co., No. 5 Mulholland, Montebello, L. A.	2-	2-12	7,202	flow 1,068 b.d.
Traders Oil, No. 1 Extension, Montebello, L. A.	2-	2-12	6,438	flow 945 b.d.
Graham & Loftus, No. 1 Coffman, Montebello, L. A.	2-	2-12	7,557	O.S. drlg.
V-8 Oil, No. 1 M.B., Montebello, Los Angeles	2-	2-12	7,150	O.S. drlg.
Wood-Callahan Oil, No. 1 Harris, Montebello, L. A.	2-	2-12	7,525	sd. sh. drlg.
Bush Oil, No. 1 Olds, Montebello, Los Angeles	3-	2-12	7,095	sd. sh. drlg.
Herley-Kelly, Inc., No. 2 Masser, Montebello, L. A.	2-	2-12	4,386	sd. sh. drlg.
Partridge, C. W., No. 1 Hillside, Whittier, L. A.	22-	2-11	1,781	pump water
Colorado Oil, No. 5 Granger, Whittier, Los Angeles	22-	2-11	2,230	deepening
Kelso, F. W., No. 1 Rio Hondo, Puente, Los Angeles	13-	2-10	1,060	sd. sh. drlg.
Richfield Oil, No. 1 Richville, N. Long Beach, Orange	17-	4-12	7,297	sd. sh. drlg.
Barthoiomae Oil, No. 8 Stern, E. Coyote, Orange	22-	3-10	1,984	sd. sh. drlg.
Standard Oil, No. 67 Emery, W. Coyote, Orange	24-	3-11	1,891	sd. sh. drlg.
Standard Oil, No. 68 Emery, W. Coyote, Orange	24-	3-11	5,885	flow 810 b.d.
Southwest Expl., No. 15 State, Hunt. Beach, Orange	10-	6-11	4,940	reaming
Southwest Expl., No. 18 State, Hunt. Beach, Orange	10-	6-11	3,774	sd. sh. drlg.
Union Oil, No. 1 Nieto, Seal Beach, Orange	12-	5-12	6,360	sd. sh. drlg.

OKLAHOMA

Week Ending May 6

NORTHERN OKLAHOMA

Atoka County

Giblett No. 1 Rich, SE SE SW Sec. 2-1-12. S.D. 728 ft.

Cleveland County

Nels Burton No. 1 Boggs, NE NE SE Sec. 16-9-2w. Drlg. 4,300 ft.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; S.D.

Comanche County

Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; drlg. 771 ft.

Richards & Richards No. 1 Anderson, NE NW SE Sec. 30-4-11w. T.D. 952 ft.; abd.

Creek County

Burke-Greis No. 1 Vanderslice, NE NE SE Sec. 30-14-7. 7-in. 2,840 ft.; F. 4,000,000 cu. ft. gas; comp.

Ellis County

Enterprize Drlg. Co. No. 1 Wall, SE NW NW Sec. 1-19-25w. T.D. 575 ft.; S.D.

Garfield County

Hughes Drlg. Co. No. 1 Misener, C NE NW Sec. 10-20-4w. 2nd Wlx. 5,915 ft.; T.D. 5,944 ft.; F. avg. 105 B.O.P.D.; comp.

Kerlyn Oil Co. No. 1 Hein, NW NW NW Sec. 36-22-4w. Drlg. 606 ft.

Garvin County

Ker-Lyn Oil Co. No. 1 Butterly, NE NE SE Sec. 22-1-1. O.W.D.D.; O.T.D. 3,205 ft.; T.D. 5,005 ft.; no shows; to perf.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. S.S.O. 5,329-58 ft.; S.O. 5,433 ft.; cd. 5,964-76 ft.; rec. sh.; cd. 6,351-76 ft.; rec. hd. sd.; T.D 6,613 ft.; perf. and gaged. 13,180,000 cu. ft. gas; S.I.

Grant County

Carter Oil No. 1 Staggers, C W½ SE NW Sec. 4-25-3w. Drlg. 3,930 ft.

Kerlyn Oil No. 1 Hein, NW NW NW Sec. 36-22-4w. T.D. 310 ft.; R.U.R.

Smythe & O'Mara No. 1 State, C SE SW Sec. 16-25-4w. W.O.C. 400 ft.

Harper County

Sinclair Prairie No. 1 George, SW SW SW Sec. 5-27-23w. Drlg. 1,800 ft.

Hughes County

Carter Oil No. 1 Hamilton, C W½ NE SW Sec. 33-4-9. T.D. 4,235 ft., S.D.

Continental Oil No. 1 Hudson, SE SE SE Sec. 8-4-9. Drlg. 2,230 ft.

Skelton et al No. 1 Gilmore, C N½ NE SE Sec. 7-5-9. S.D. 970 ft.

Jackson County

English & Morgan No. 1 Lee, NW NW SE Sec. 36-2-19w. W.O.C. 1,320 ft.

Kay County

Cooper Drlg. Co. No. 1 Caughlin, SE NE SW Sec. 30-25-1. T.D. 4,502 ft., Miss.; D.&A.

Crawford No. 1 Bethel, SE SE NW Sec. 34-27-2w. T.D. 1,040 ft.; S.D.

Kingfisher County

K. A. Ellison No. 1 Baker, NE NE SE Sec. 20-19-5w. Miss. 6,290 ft.; T.D. 6,920 ft.; fsg. D.P.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Miss. 7,014 ft.; Woodford 7,531 ft.; Msnr. 7,562 ft.; Wlx. 8,105 ft.; 2nd Wlx. 8,275 ft.; T.D. 8,330 ft.; S.D.O.

Kiowa County

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. S.D. 750 ft.

Pure Oil Co. No. 1 Fuqua, SW SW NE Sec. 18-6-16w. Drlg. 1,425 ft.

Wichita Oil, Inc., No. 1 Mace, SW SW SW Sec. 11-5-15w. P. ½ B.O.; T.D. 133 ft.; comp.

Lincoln County

Cooper Drlg. No. 1 Johnson, NE NE NW Sec. 32-15-5. R.U.R.

Helmerich & Payne No. 1 Johnson, SE SE SE Sec. 2-15-1. Drlg. 2,660 ft.

W. A. Villines No. 1 Marshall, NW NE NE Sec. 28-15-4. R.U.R.

McIntosh County

Scruggs et al No. 1 Lanning, SE SW SW Sec. 19-12-15. Spd.

Muskogee County

Petroleum No. 1 Scott, SE SW SW Sec. 14-13-19. Mch.

Oklahoma County

R. Olsen No. 1 White, C NE NE Sec. 30-11-1, Vla. 6,338 ft.; dolo. 6,410 ft.; Wlx. 6,503 ft.; 2nd Wlx. 6,610 ft.; T. D. 6,636 ft.; F. 250 B.O. in 24 hrs.; cut 28%.

O. A. Walters No. 1 Olmstead, C E½ SE NW Sec. 12-14-3w. Drlg. 5,830 ft.

Okmulgee County

Jim Wise Drlg. Co. No. 1 Morrow, SW NW NE Sec. 16-15-13. 3,000,000 cu. ft. gas 1,930-38 ft.; decreased to 1,000,000 cu. ft. at 1,985 ft.; Msnr. 2,205 ft.; Vio. 2,466-88 ft.; H.F.W. at T.D. 2,657 ft.; D.&A.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. Drlg. 2,535 ft.

Pittsburg County

Phillips Pet. Co. No. 1 Hubacker, C NW NE Sec. 11-7-15. Dutcher 5,973 ft.; drlg. 7,192 ft.

Pontotoc County

Union Dev. Co. No. 1-A Abbott, SW NW NE Sec. 34-3-6. T.D. 4,100 ft.; D.&A.

L. Walker No. 1 King, SW SE NW Sec. 5-4-7. T.D. 1,089 ft.; U.R.

Pottawatomie County

F. W. Cooper No. 1 Strawn, SE SE SW Sec. 32-8-5. Drlg.

John Dickson No. 1 La Reau, NE NE SW Sec. 33-6-3. Hntn. 3,600 ft.; est. 2,000,000 cu. ft. gas; no shows; T.D. 3,615 ft.; D.&A.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. Drlg. 1,455 ft.

Seminole County

J. G. Buell No. 1 Madgett, SE SW SE Sec. 15-10-5. Drlg. 3,460 ft.

W. C. Wood No. 1 Aldridge, SW NW NE Sec. 5-8-8. T.D. 1,910 ft.; H.F.W.; S. D.O.

Woodson Oil No. 1 Goodrich, NE SW SE Sec. 14-5-5. Drlg. 2,140 ft.

Stephens County

Phillips Pet. Co. No. 1 Culbertson, NW NW SE Sec. 4-1-5w. T.D. 5,620 ft.; F. 189 B.O. in 24 hrs.; C.O.

Texas County

Republic Nat. Gas Co. No. 1 Dulabohn, C Sec. 21-6n-15ecm. Drlg. 2,365 ft.

Republic Nat. Gas Co. No. 1 Judd, CSL SW Sec. 24-6n-15ecm. T.D. 2,870 ft.; gas 7,100,000 cu. ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 11,225 ft.

John Koberg No. 1-A Harms, C NW NE Sec. 6-10-16w. Drlg. 400 ft.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,190 ft.; recvd. tools; drlg. cmt.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. Arb. 7,930 ft.; S.S.O.; drlg. 8,055 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. 1,450 ft.

Jefferson County

H. W. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. W.O.C. 102 ft.

Marshall County

Hughes et al No. 1 Vittitto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; T.D. 7,110 ft.; drlg. by 8-in. 880 ft. to 1,140 ft.; fsg. 5-in.

Tillman County

Paul Helf No. 1 Brisley, NE NE NE Sec. 22-1s-19w. T.D. 3,515 ft.; S.D.O.

KANSAS

Week Ending May 6 (Descriptions are East unless marked otherwise)

Barber County

Barbara Oil Co. No. 1 Wilson, C SE Sec. 17-33-13. Arb. 5,180-89 ft.; S. W.; to P.B.

Barton County

Amerada Pet. Corp. No. 1 Dagleman, C NE NE Sec. 23-19-15w. W.O.C. 875 ft.

B. B. & M. No. 1 Dupont, SE SE NE Sec. 21-19-11w. Drlg. 2,295 ft.

Crown Pet. No. 1 Koch, NE NE NE Sec. 23-20-12w. T.D. 2,670 ft.; rng. 8-in.

R. E. Day et al No. 1 Feltes, SE SE NE Sec. 14-16-12w. O.W.D.D.; S.S.O. 2,954-62 ft.; Lans. 3,069 ft.; drlg. 3,160 ft.

Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Lans. 3,100 ft.; Arb. 3,338 ft.; T.D. 3,371 ft.; S.D.O.

I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. Pay 3,130 ft. and 3,152-54 ft.; Arb. 3,379 ft.; H.F.W. 3,405 ft., T. D.; D.&A.

Butler County

Carey & Jennings No. 1 Kelly, C SW Sec. 20-27-4. S.D. 265 ft.

Simpson Oil Co. No. 1 Evans, CSL SW Sec. 21-28-7. Drlg. 2,295 ft.

Chase County

Alex McCoy No. 1 Berns, SE NW NE Sec. 29-22-6. Drlg. 1,500 ft.

Cowley County

C. L. Carlock No. 1 Shaffer, SW SE SW Sec. 3-31-4. Drlg. 3,000 ft.

Cities Service No. 1 Pope, SE NE SW Sec. 21-31-3. Drlg. 500 ft.

Lloyd, Frost & Study No. 1 Chamness, NE NE SW Sec. 35-30-3. Drlg. 3,230 ft.

Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. T.D. 3,248 ft.; P.B. 3,000 ft.; T.A.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. T.D. 2,470 ft.; U.R. 7-in.

O. K. Supply Co. No. 1 Kamabe, C NE NE Sec. 15-14-2. Drlg. 705 ft.

Ellis County

Fred Smith No. 1 Werth, SW SW SE Sec. 33-15-18w. Rotary rig.

Ellsworth County

Gulf Oil Co. No. 1 Janssen, SW SW SW Sec. 29-17-10w. S.O. 2,984 ft.; drlg. 3,246 ft.

Johnson County

OK Supply Co. No. 1 Kamabe, C NE NE Sec. 15-14-22. Bart. sd. 830-56 ft., T.D.; perf. csg. 707-20 ft.

Kiowa County

Sinclair Prairie No. 1 Price, NW NW SW Sec. 22-28-20w. T.D. 3,090 ft.; P.B. 2,140 ft.; drlg. 2,160 ft.

Leavenworth County

John Hardaway No. 1 Scheller, SW SE SW Sec. 30-10-22. S.D. 345 ft.

Mead County

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Ness County

Oriental Oil Co. No. 1 Beardslee, NE NE NE Sec. 21-18-25w. Rotary rig.

Norton County

Power Oil et al No. 1 Van Patten, C NE Sec. 26-4-21w. Drlg. 3,170 ft.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; U.R. 8-in. csg.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. Miss. 2,835 ft.; H.F.W. 3,302-10 ft.; rng. csg.; T.D. 3,840 ft.

Phillips County

Blue Stem Oil Co. No. 1 Donaldson, SE NE NE Sec. 25-5-18w. T.D. 2,665 ft.; C.O.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Rice County

Gulf Oil No. 1 Barngrover, CWL SW SW Sec. 30-19-9w. Lans. 2,943 ft.; S.O. 3,018-20 ft.; Arb. 3,269-84 ft.; T.D. 3,284 ft.; P. 441 B.O. in 8 hrs.; pot. 1,322 B.O.

Gulf Oil No. 1 Linke, CEL NE SE Sec. 36-19-10w. Drlg. 1,860 ft.

McPherson Drlg. Co. No. 1 Cramm, SE SE SW Sec. 15-19-9w. Drlg.

Phillips Pet. Co. No. 1 Brandenstein, C SE NW Sec. 35-19-10w. Drlg. 1,390 ft.

Phillips Pet. Co. No. 1 Proffitt, CEL NE NE Sec. 8-20-9w. Arb. 3,244-45 ft.; T.D. 3,259 ft.; P. 94 B.O. in 14 hrs.; 21 B.O. in 4 hrs., and P. off.

Russell County

Cities Service No. 1 Dutt, NW NW SE Sec. 18-13-14w. Rng. csg. 748 ft.

Phil-Han Oil Co. No. 1 Hill, SE SW SW Sec. 16-14-14w. Lans. 3,023 ft.; 500 ft. O.I.H.; swbd. down and S.D.O.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. R.U.R. 1,148 ft.; C.O. 1,050 ft.

Sedgwick County

Century Pet. Co. No. 1 Wilke, SW SE SW Sec. 1-29-2. T.D. 800 ft.; pulling 5-in.

Shawnee County

W. M. McKnab No. 1 Fritz, SW SE NW Sec. 4-12-14. Miss. 1,901 ft.; Hunton 2,380 ft.; drlg. 2,625 ft.; last report.

W. M. McKnabe et al No. 1 Spurgeon, SE SW SE Sec. 28-10-15. M.I.M.

Stafford County

Lauck & Moncrief No. 1 Connaughley,

SW SW SW Sec. 18-24-13w. Lans. 3,590 ft.; Arb. 4,211-31 ft., T.D.; no shows; P.B. 3,902 ft.

Wabaunsee County

Scheu & Tague et al No. 1 Ave, NW SW NW Sec. 10-12-8. Drlg. 1,655 ft.

Woodson County

H. H. Billerman No. 1 Huston, CSL SW SW Sec. 36-24-13. S.D. 1,555 ft.
Roby et al No. 1 Meairs, SW SW NW Sec. 21-25-14. T.D. 1,189 ft., sd.; S.O.
M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

MISSOURI

Andrew County

Birkett et al No. 1 Gee, NW NW SE Sec. 28-60n-35w. R.U. mach.

Clay County

Eastern Drlg. Co. No. 1 Williams, NW NW NE Sec. 28-53-32w. Drlg.
Frank Hopper et al No. 1 Black, NW NW NW Sec. 36-52-32w. Drlg. 655 ft.; (cor.).

Clinton County

C. E. King et al No. 1 Willis, NW NW NW Sec. 13-55n-32w. S.D. 240 ft.

De Kalb County

Geo. W. Moore No. 1 McQuarter, NE SW SW Sec. 11-57n-31w (wildcat). Drlg. 364 ft.

Holt County

Brin & Nathan No. 1 Garrett, C NE NE Sec. 2-61n-38w. Loc.
J. H. Everitt et al No. 1 Spring, SW SW SE Sec. 30-62-38w. S.G. 500 ft.; fsg. 2,440 ft.
Markham et al No. 1 Gaffney, SW SE SW Sec. 24-63-40w. R.R.

Hickory County

A. M. Sims No. 1 Wilson, NW NW NW Sec. 3-37n-21w. S.D. 1,596 ft.

Johnson County

J. W. Farrar No. 1 Bastell, SE SE NE Sec. 27-46n-28w. S.D. 461 ft.
J. W. Farrar No. 1 Gard, SE NW NW Sec. 21-46n-28w. S.D. 460 ft.

Mercer County

Geo. W. Moore No. 1 Castell, NE NE NE Sec. 32-65-24w. Loc.

Shelby County

Chas. Delfeld No. 1 Turner, C NW NW Sec. 27-59n-9w (wildcat). Drlg. 204 ft.

Sullivan County

H. V. Elwell No. 1 Taylor, CNL S½ S½ Sec. 12-62-21w. Rig.

NEBRASKA

Cass County

Golden Rod Oil Co. No. 1 Sparer, SE SE SE Sec. 8-11-13e. U.R. 280 ft.

Richardson County

H. C. Stephens and E. Uhri No. 1 Harlow, C SE NE Sec. 32-1n-13e. O.W.D. D.; Lans. 378 ft.; T.D. 804 ft.; D.&A.

Hitchcock County

C. L. Price No. 1 Carter, SE NE SW Sec. 35-2n-32w. Lans. 3,976 ft.; S.D. 4,000 ft.; S.O.

Scotts Bluff County

J. A. Fairy Pet. Corp. No. 1 McCully, C SE SE Sec. 35-23n-58w. Loc.

NORTH MISSISSIPPI

Clarke County

Jeremiah L. Ryan et al No. 1 M. Eddins, 500 ft. SE cor. Sec. 29-2n-14e. Drlg. gmmy. sh. 1,175 ft.

Lowndes County

Ryan & Anderson No. 1 Swoope, Sec. 3-19s-18w. Set 9-in. csg. 1,162 ft.; drlg. 1,410 ft.

Hinds County

Tatum et al No. 1 S. F. Johnson, NE cor. Sec. 29-6n-1w. S.D. 5,218 ft., sd.; arng. D.D.; erecting 122-ft. drk; sdtrkd. hole at 4,370 ft.; drlg. blue sh. 5,525 ft.

Madison County

Union Prod. Co. No. 1 Anderson, Sec. 12-8n-1w. Drlg. 359 ft.; set 13⅜-in. csg 800 ft.; T. chk. 4,348 ft.; cg. 4,770 ft. in chk.; D.S.T. 4,401-37 ft.; S.O.&S.W. drlg. bl. sh. 6,010 ft.

Pike County

S. R. Crouch et al No. 1 E. P. Cupit, Sec. 25-2n-7e. R.U.

Prentiss County

Home Dev. Co. No. 1 Allen, Sec. 8-7s-9e. Drlg. L. 640 ft.

Simpson County

Cleve Love No. 1 N. E. Garner, SW cor. SW NE Sec. 1-10n-17w. Drlg. Wlx. formation 3,150 ft.

FLORIDA

Nassau County

St. Mary Oil Corp. No. 1 Hillard, Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; drlg. sd. 4,580 ft.

GEORGIA

Clinch County

Georgia Resources, Inc., No. 1 Gillican, Dist. No. 4 (formerly Reynard Oil Co.). Drlg. 240 ft.

Pierce County

Donald Clark et al No. 1 Adams, Dist. No. 4. Drlg. 1,928 ft.

ARKANSAS

Calhoun County

J. R. Lockhart No. 1 Southern Kraft Corp., SE cor. NW NW Sec. 17-14-13. O.W.W.O.; (formerly C. E. Murdock); reported T. ool. L. 4,371 ft.; S.D. 5,095 ft.; W.O.

Clark County

J. B. Zick, Tr., No. 1 A. P. Greene, NE cor. SE SE Sec. 21-8s-18w. Arng. to core 520 ft.

Columbia County

Atlantic Ref. Co. No. 1 J. A. Foster, C NW NE Sec. 24-17-20. M.I. rig.
Atlantic Ref. Co. No. 1-E Garrett, C SE NW Sec. 24-17-20. Set 9-in. csg. 3,168 ft.; T.D. 3,175 ft.; W.O.C.
Hassie Hunt No. 1 Tally, Sec. 14-17-20. T. Bknr. 7,466 ft.; fsg. 7,547 ft.
Lion Oil Ref. Co. No. 1 Crisp-Glasgow Unit, C NE SE Sec. 23-17-20. Drlg. rd. &gr. sh. 4,593 ft.
Lion Oil Ref. Co. No. 2 Crisp-Glasgow Unit, C NW SE Sec. 23-17-20. Drlg. rd. &gr. sh. 4,595 ft.
Lion Oil Ref. Co. No. 1 A. C. Garrett, C SE SE Sec. 13-17-20. Set 10¾-in. csg. 2,269 ft.; W.O.C.
Phillips Pet. Co. No. 1 Askew Unit, C NE NW Sec. 4-17-21. T. Tr. Pk. 4,620 ft.; T.C.V. 5,920 ft.; drlg. rd.&gr. sh. 6,351 ft.
Shell Pet. Corp. No. 1 L. Garrett, C NW SE Sec. 13-17-20. 9⅝-in. csg. 2,215 ft.; drlg. rd.&gr. sh. 6,350 ft.
Shell Pet. Corp. No. 1 Glasgow, C NW NW Sec. 23-17-20. Set 9⅝-in. csg. 2,250 ft.; drlg. 3,710 ft.
Shell Pet. Corp. No. 2 Glasgow, C SW NW Sec. 23-17-20. Drlg. rd.&gr. sh. 6,420 ft.
Southwood Oil Co. No. 1 L. A. Grelling, C NE NW Sec. 23-17-20. T.D. 7,489 ft.; D.S. stk.; P.B. 6,720 ft.; circ. with oil; could not pull D.S.; P.B. 2,400 ft.; drld. to 2,770 ft.; lost circ.; P.B. 2,352 ft.; to sdtrk.; drlg. new hole 3,810 ft.
Standard Oil Co. of La. No. 1-B T. Crumpler, NW cor. NW NW Sec. 15-17-19. Drk.
Standard Oil Co. of La. No. 1-B E. D. Harris et al, 660 ft. N, 664 ft. W, SE cor. SE NE Sec. 15-17-19. Drlg. sh. 2,435 ft.
Standard Oil Co. of La. No. 2 Phillips, 660 ft. S, 665 ft. W, NE cor. NE NW Sec. 15-17-19. Drlg. sh. 1,520 ft.
Tide Water Oil Co. No. 1 Price, C NE SW Sec. 15-18-19. T. Smkvr. L. 8,202 ft.; T. Rey. L. 8,224 ft.; D.S.T. 8,215-37 ft., 8 min.; ⅝-in. cks. T.&B.; no pressure; set 5½-in. csg. 8,234 ft.; T.D. 8,237 ft.; fsg. line.
G. H. Vaughn No. 1 D. B. Baker Unit, C SW SW Sec. 14-17-20. Drlg. 3,605 ft.

Hot Spring County

John H. James No. 1 Sturgess Lbr. Co., SW cor. SW SE Sec. 24-6-18. 10-in. csg. 58 ft.; cd. hd. dense gr. L. 964-78 ft.; T.D. 1,048 ft.; S.O. reported 480-82 ft. and 819-21 ft.; hd. sd.; cd. 1,048-58 ft.; rec. 5 ft. v. hd. sh.; S.D.; pmp. rep.

Lafayette County

East Texas Ref. Co. and Erwin & Leach No. 1 J. Bell Est., 981 ft. S. 609 ft. E, NW cor. NW Sec. 19-16-23. Set 10¾-in. csg. 104 ft.; drlg. 285 ft.
Standard Oil Co. of La. No. 2 Waters et al, SE cor. NE SW Sec. 7-16-22. Drlg. L. 5,345 ft.

Little River County

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. Cd. 1,270-80 ft.; sh.& wtr. sd.; reported S.O. 1,365-70 ft.; 1,542-64 ft. sd. and 1,564-74 ft. sdy. L.; cor. T.D. 1,598 ft.; set 7-in. csg. 1,590 ft. (cor.); T.D. 1,598 ft.

Lonoke County

Lonoke-Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. Hole clean; U.R. 8¼-in. csg. 236 ft.; T.D. 300 ft.; R.U. rotary tools.
J. F. Russell No. 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. Sec. 17-5n-10w. Drlg. hd. gr. sh. 1,995 ft.

Miller County

Lyons & Merritt No. 2 Matlock, NE cor. SE SE Sec. 2-20-28. Drlg. L.&sh. 5,870 ft.

Nevada County

Berry Asphalt Co. No. 1 Groves Lbr. & Tbr. Co., SE cor. N SW Sec. 4-14-20. R.U.
Berry Asphalt Co. No. 2 Groves Lbr. & Tbr. Co., SW cor. SW NW Sec. 4-14-20. T. Nac. sd. 1,206 ft.; set 7-in. csg. 1,206 ft.; est. 800 ft. F.I.H.; pmpg.; no ga.

Ouachita County

J. E. Crosbie, Inc., No. 2 F. A. Laney, Sec. 36-15-16. R.U.
Phillips Pet. Co. No. 1 J. D. Reynolds, 330 ft. SE cor. SE NW Sec. 27-15-15. O.W.W.O.; O.T.D. 4,926 ft.; comp. as disc. well, Snow Hill field; perf. csg. 2,732-35½ ft., 2,728-31½ ft., 2,744-47½ ft., and 2,756-60 ft.; est. 2,300 ft. F.I.H., 1% oil; P.B. 2,770 ft.; set cmt. retainer 2,719 ft.; sqzd.; S.D.; W.O. 2,746 ft.

Saline County

A. W. Givens No. 1 Williams, 375 ft. S, 420 ft. E, NW cor. NE NE Sec. 18-3s-15w. R.U.&S.D. 104 ft.
E. M. Jones No. 1-C Murphy Ld. Co., Sec. 24-18-18. Drlg. 1,897 ft.
Marine Oil Co. No. 7 fee, 330 ft. SE cor. NE NE Sec. 20-18-17. Set 16-in. 138 ft. and 10¾-in. 1,653 ft.; W.O.C.

Union County—Schuler

Lion Oil Ref. Co. No. 2 F. N. Bank, NW cor. NE Sec. 13-18-18. T. Jones sd. 7,570 ft.; T.D. 7,695 ft.; rng. 7-in. csg.
Lion Oil Ref. Co. No. 3 F. N. Bank, C 8⅛ SW SE Sec. 12-18-18. Drlg. rd.&gr. sh. 6,198 ft.
Phillips Pet. Co. No. 4 Brian, NE cor. NE SE Sec. 13-18-18. T.D. 7,760 ft.; T. Jones sd. 7,528 ft.; set 7-in. csg. 7,736 ft.; perf. 7,630-35 ft.; flwd. est. 900 bbls., est. 40% S.W.; 20/64-in. ck.; T. P. 1,000 lbs.; C.P. 1,400 lbs.
Phillips Pet. Co. No. 10 Sewell, C S½ Lot 4, SW Sec. 7-18-17. Set 7-in. 7,752 ft.; T.D. 7,785 ft.

Union County—Other

Bob Milam No. 1 Primm Est., SE cor. Lot 5, NE Sec. 1-16-16. Set 10-in. csg. 106 ft.
Oliphant Oil Co. No. 1 Union Sawmill Co., C SW NW Sec. 22-19-14. Cd. 2,492-2,512 ft.; rec. 1 ft. 6 in. tight gr. sd.; set 9⅝-in. csg. 3,184 ft.; T. C.V. 5,405 ft.; drlg. 6,514 ft.
Sam Sebersky et al No. 2 J. N. Jerry, 100 ft. SW of No. 1, Sec. 21-17-14. Oil and S.W. 2,687-98 ft.; set 6-in. csg. 2,691 ft.; T.D. 2,698 ft.; W.O.C.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark. La. Gas Co. No. 2 Gayoso, 660 ft. SW cor. SE Sec. 14-16-10. T. Tr. Pk. 5,432 ft.; D.S.T. 5,796-5,805 ft. tstd. dry in 26 min.; set 8⅝-in. csg. 6,300 ft.; cg. 8,154 ft.
Ark. La. Gas Co. No. 1 Shehee, C NW SW Sec. 13-16-10. D.S.T. 5,090-5,150 ft.; 20,000,000 cu. ft. gas; 9 min.; tool pres. 500 lbs.; ⅝-in. cks. T.&B.; same cks.; D.S.T. 5,156-95 ft.; 1,000,000 cu. ft. gas; tool pres. 16 lbs.; por. Pett. L. 5,093-5,105 ft., 5,124-35 ft., and 5,160-83 ft.; set 7-in. csg.; T.D. 5,195 ft.
Union Prod. Co. No. 1 Bienville Sch. Bd., 1,056 ft. S, 875 ft. W, NE cor. Sec. 16-16-10. Drlg. sh.&anhy. 4,150 ft.

Bossier Parish

Harry Hanbury No. 1 Leonard, 660 ft. NE cor. Sec. 19-19-13. Set 16-in. csg. 127 ft.; set 10-in. csg. 1,391 ft.

Caddo Parish

R. E. Allison No. 8 Ellerbe, SW cor. Sec. 26-18-14. T. Pett. 5,549 ft.; rng. csg.; T.D. 5,545 ft.
R. E. Allison No. 9 Ellerbe, Sec. 26-18-14. Set surf. csg. 2,240 ft.; drlg. 3,750 ft.
R. E. Allison No. 10 Ellerbe, Sec. 26-18-14. Drlg. sh. 4,280 ft.
Ballow & Williams No. 1 Crystal fee, SE cor. NE SW Sec. 24-21-16. Set 6-in. csg. 975 ft.; W.O.S.R. 981 ft.
Batchelor, Adams & Birdwell No. 1 Van Horn, Sec. 22-22-16. Drlg. 2,663 ft.
Bossier Holding Co. No. 1 Woolworth, SE cor. Sec. 26-20-15. Set 9⅝-in. csg. 1,370 ft.; drlg. 3,722 ft.
J. M. Buckler No. 2 Barry, NW Sec. 11-20-16. Set 7-in. csg. 1,345 ft.; T.D. 1,589 ft.; aczd. with 3,000 gal. and tstd. S.W.
Carney et al No. 3 Hart, SE NW Sec. 21-21-16. T.D. 2,423 ft.; W.O.
Drillers, Inc., No. 1 Ellerbe, SW cor. Sec. 23-18-14. Drlg. 5,310 ft.
East Texas Ref. Co. No. 2 Williams, SE cor. NE Sec. 5-23-15. Drlg. chk. rk. 2,608 ft.
M. M. Ferrell No. 1 Satterwhite, SE NW Sec. 10-20-16. Set 6-in. csg. 1,335 ft.; tstd. S.W.; S.O. 1,580 ft.; acdzd. with 3,000 gal.; tstd. S.W.; S.O.; S.D.; W.O.
Harry Fotiades No. 1 Brown, 880 ft. N, 115 ft. W, C Sec. 35-18-14. Set 9⅝-in. csg. 1,505 ft.; drlg. 1,570 ft.
Gerhig Co. No. 1 Caddo Levee Bd., SE Sec. 36-21-16. Set 7-in. csg. 2,261 ft.; tstd. S.O. and est. 1,000,000 cu. ft. gas 2,273 ft.; T.D. 2,299 ft.; W.O.
Hamilton & Stone No. 1 Atlanta, 500 ft. S, 244 ft. W, NE cor. NW Sec. 2-20-16. R.U.
Harry Hanbury No. 1 De Soto Corp. (formerly W. R. Nicholson Oil Co.), NW cor. Sec. 26-18-14. O.W.D.D.; O.T.D. 5,563 ft.; R.U. to whipstock.
Hurricane Pet. Corp. No. 1 De Soto, Sec. 26-18-14. Drlg. sh.&L. 5,012 ft.
La. Nat. Gas Co. No. 2 Stiles, 1,220 ft. N, 100 ft. W, SE cor. NE Sec. 28-21-16. Set 6-in. csg. 1,038 ft.; T.D. 1,041 ft.; W.O.C.
Lisbon-Iberia Oil Co. No. 1 Morgan et al, SE cor. NE SE Sec. 34-18-14. Drlg. 5,086 ft.
Martin Drlg. Co. No. 1 Van Horn, 990 ft. E, 330 ft. S, NW cor. SW Sec. 22-22-16. D.S. tstd. S.W. 2,792 ft.; arng. P.B. 2,742 ft.; O.T.D. 2,792 ft.
Midfield Oil Co. No. 1-B Muslow, 330 ft. N, 400 ft. W, C Sec. 6-20-15. Drlg. sh. 1,350 ft.
W. R. Nicholson Oil Co. No. 1 Exchg. Nat. Bnk., NE cor. Sec. 26-18-14. Cg. 5,545 ft.
Oblinger & Ritter No. 2 Boisseau, SE cor. Sec. 34-21-16. Set 6-in. csg. 971 ft.; T.D. 977 ft.; W.O.C.
Porter et al No. 1 Muslow, NW SE Sec. 32-21-15. Set 6-in. csg. 1,540 ft.; W.O.C.
Red Iron Drlg. Co. No. 1 Model Gardens Unit, SE cor. Sec. 23-18-14. Slight porosity 5,556-59 ft. and 5,564-69 ft.; rng. csg.; T.D. 5,580 ft.
Simplex Oil Co. No. 10-A Youree, 1,980 ft. N, 660 ft. E, SW cor. Sec. 7-20-14. O.W.D.D.; O.T.D. 1,989 ft.; D.D. to 2,297 ft.; 4-ft. sd.; arng. to set 4½-in. csg. 2,297 ft.
Skidmore-O'Mara, Inc., No. 1 Muslow, O.W.W.O., SW Sec. 31-21-15. S.D. 1,000 ft.
Joe Straughn No. 1 Hart, 430 ft. N, 330 ft. E, SW cor. Sec. 29-21-16. Set 6-in. csg. 2,220 ft.; tstd. dry; fsg. 2,398 ft.
Tippett Oil Co. No. 1 Browning, C E½ NE NE Sec. 28-22-16. R.U.
Wardell Oil Co. No. 1 Clark & Hutchinson, NE SE Sec. 26-18-14. Set 9⅝-in. csg. 1,502 ft.; drlg. L. 4,470 ft.
R. W. Williams No. 2 Crystal fee, SW cor. SE SW Sec. 24-21-16. Set 7-in. csg. 1,500 ft.; set 5½-in. csg. 2,274 ft.; bttm. 17 ft. perf.; cor. T.D. 2,274 ft.

Caldwell Parish

Critchett & Woods (formerly E. T. Oakes) No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. S.D. 1,503 ft.; rig rep.

Claiborne Parish

Maritsky & Bibby No. 2 McClung, SE cor. SW Sec. 29-21-7. Set 6-in. csg. 1,290 ft.; W.O.S.R. 1,456 ft.
Maritsky & Bibby No. 3 McClung, SW Sec. 29-21-7. Set 10-in. csg. 90 ft.

De Soto Parish

Atlantic Ref. Co. and Seaboard Oil Corp. No. 1 Frank Grocery Co., NW Sec. 35-12-11. Set 8-in. csg. 101 ft.
Daniel Murray No. 1 Russell, 50 ft. N, 500 ft. W, SE cor. NE NW Sec. 12-11-16. O.W.D.D.; O.T.D. 2,046 ft.; R.U.; to D.D.

La Salle Parish

Adams O. & G. Co. No. 1 Goodpine Oil Co., 660 ft. S, 330 ft. W, C Sec. 1-6-2e. T.D. sh. 2,499 ft.; arng. core.
W. B. Jarvis No. 1-A Montague, NE cor. NW NW Sec. 11-9-1e. Set 6-in. csg. 1,500 ft.
Snow Black Oil Co. No. 1 Pendarvis, 250 ft. NE cor. SW SE Sec. 21-10-1e. S.D. for wtr. 1,200 ft.
G. W. Ziegen No. 16 La. Cent. Lbr. Co., SW cor. Sec. 24-11-2e. T. Wlx. 1,619 ft.; S.W.; S.D.; W.O. 1,690 ft.

Natchitoches Parish

Jack Lent et al No. 1 Whatley, SW cor. Sec. 17-10-10. S.O.&G. reported at 1,490-1,516 ft.; D.S.T. 3,282-96 ft.; tstd. 100 ft. mud cut with 40-grv. oil; P.B. 3,300 ft.; set 6⅝-in. csg. 3,282 ft.; bld. down 600 ft. of bttm.; S.S.O.; ran 2-in. tbg. and lnr. and tstd. S.O.&S.W.; T. tbg. and lnr. and tstd. S.O.&S.W.; pmpd. S.O. and much S.W.; pmpd. off approx. 10 B.O.; did not shoot with nitro; bailing; S.O.&wtr.; T.D. 3390 ft.

Sabine Parish

Geo. Ellis No. 1 Walker, 500 ft. NW cor. NW SE Sec. 8-4-11. Set 12½-in. csg. 276 ft.; reported S.O. 2,180 ft. and 2,263-65 ft.; rng. csg. 2,266 ft.; cd. sdy. sh. 2,265-69 ft.; set 7-in. csg. 2,250 ft.; drld. plug, and W.O.; T.D. 2,271 ft.
Hunter Co. No. 9 Bowman Hicks, 660 ft. S and E, C Sec. 12-7-13. Set 6-in. csg. 2,103 ft.
Potter et al No. 1 Ebarb, NE cor. SE Sec. 4-7-13. Set 6-in. csg. 2,038 ft.
Sklar & Major Oil Co. No. 1 Sabine, 440 ft. S, 990 ft. W, NE cor. SE NE Sec. 7-7-11. Drlg. sh. 700 ft.
C. H. Smith Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Rng. 7-in. csg.; tstd. S.W. in 2-ft. sd. 2,472-74 ft.; arng. P.B.
H. M. Sneed No. 1 Leone, SW cor. NW SE Sec. 8-7-13. Drlg. sh. 1,500 ft.
Jeff Spier No. 1 Remedes, SE cor. NW NW Sec. 12-7-13. Set 6-in. csg. 2,168 ft.
Sutton Zwolle Oil Co. No. 2 Bowman Hicks, 330 ft. SW cor. SW NW Sec. 18-7-13. Drlg. ch. rk. 2,220 ft.

Union Parish

Standard Oil Co. of La. and Joe Modisett

No. 1-B **Frost Lbr. Ind., Sec. 14-23n-2w.** Cd. 6,910-24 ft.; rec. 12⅝ ft. sd. and strks. sh.; no shows; set 9⅝-in. csg. 4,508 ft.; cd. 7,008-24 ft., hd. sd. &sh.; hd. sdy. L. to 7,084 ft.; cd. 7,128 ft.; cross bedded gr. shly. sd.; drlg. ahead.

Webster Parish

Hunt Oil Co. No. 5 Bodcaw-Stewart, NW cor. NE Sec. 33-21-10. Hdwy. sd. 5,734-63 ft. and 5,885-95 ft., oil; set 9⅝-in. csg. 5,938 ft.; T.D. 8,347 ft.; "D" sd. 8,165-80 ft.; (dist.); Bodcaw sd. 8,253-92 ft. (dist.); set 7-in. csg. 8,342 ft.; perf. 8,270-90 ft.; will not flw.; believed bad csg. job, 8,34[illegible] ft.; arng. recmt. csg.

Hunt Oil Co. and Magnolia Pet. Co. No. 1 Gray-Cox, SW cor. Sec. 19-21-9. Drlg. sh. 3,090 ft.

Hunt Oil Co. No. 1 Miller, 100 ft. N, C NW NE Sec. 4-20-10. Drlg. sh.&L. 7,516 ft.

Hunt Oil Co. No. 1 Stewart, NW SE Sec. 32-21-10. Set 9⅝-in. [illegible]72 ft.; T.D. 5,680 ft.; W.O.C.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W, C SE Sec. 29-23-9. Used 750 gal. acd. and flwd. and swbd. 83 B.P.D.; T.D. 9,250 ft.; O.T.D. 9,380 ft.; flwd. 31 bbls. in 5½ hrs.; 3 heads; through 1-in. ck.; pulled 2½-in. tbg. and ran 2-in. tbg.; flwd. 50 B.P.D. by heads; went in to shoot with 65 qts. nitro at 9,250 ft.; went off at 8,350 ft.; C.O. hole; T.D. 9,250 ft.

Mustates Oil Corp. No. 1 Giddens, 100 ft. NW cor. SW SW Sec. 30-21-9. Set 13-in. csg. 100 ft.; set 9⅝-in. csg. 5,794 ft.; T. "D" sd. 8,482 ft.; cd. to 8,494 ft.; rec. 3 ft. tight sd., odor and slight sat.; cd. Bdcw. sd. 8,576-81 ft.; rec. 9 ft. sd., strong gas and dist. odor, good stain; cg. ahead.

Oliphant Oil Co. No. 2-A Stewart et al, SW cor. Sec. 33-21-10. Drlg. sdy. sh. 7,110 ft.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S, C SE Sec. 30-18-8. Set 9⅝-in. csg. 6,490 ft.; T. Pettit 6,665 ft.; T. Tr. Pk. 6,910 ft.; drlg. sdy. sh.&sd. 9,639 ft.

Woodley Pet. Co. No. 1-B R. R. Cox, 660 ft. SW cor. Sec. 23-21-10. O.W.D.D.; O.T.D. 4,695 ft.; R.U. to D.D.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.

Continental Oil Co. No. 1 Lucion Duhon, Sec. 17-12s-3e. Drlg. sh. 9,036 ft.

Stanolind O. & G. Co. No. 1 Blanchet, Sec. 67-12s-3e. Loc.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 7 Columbia Ld. & Tbr. Co., Sec. 15-6s-13w. T.S. 7,321 ft.; T.D. 7,334 ft.; rng. csg.

Republic Prod. Co. No. 4 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. W.O. rig.

Republic Prod. Co. No. 1 Whitman, Sec. 15-6s-3w. T.D. 7,338 ft.; 7-in. csg. 7,316 ft.; I.P. 343 B.P.D.; ¼-in. ck.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. 13⅜-in. csg. 1,700 ft.; T.D. 9,453 ft.; fsg.

Texas Co. No. 2 Wax Bayou Co., Sec. 21-16s-12e. T.D. 10,696 ft.; conditioning mud.

Baton Rouge—East Baton Rouge Parish

Guaranty Oil Co. No. 1 D. J. Morgan. 9⅝-in. csg. 1,169 ft.; T.D. 3,708 ft.; P. B. to 2,065 ft. to strghtn. hole; sdtrkd.; drlg. sh.&L. 4,860 ft.

Geo. Helis et al No. 1 McInnis, Sec. 36-8s-1w. Drlg. sh. 7,500 ft.

Lisbon-Iberia Oil Co. No. 1 D. A. Duplanter, Sec. 66-7s-1w. Drlg. sh. 3,566 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 3-B State-Bay, Sec. 13-22s-17e. Drlg. sdy. sh. 4,642 ft.

De Large—Terrebonne Parish

Fohs Oil Co. No. 1 Buckley-Mahler, Sec. 25-19s-16e. 13⅜-in. csg. 3,380 ft.; drlg. sh. 8,822 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 11 Wilberts, Sec. 67-9s-11e. Loc.

Bayou des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

Caillou Island—Terrebonne Parish

Texas Co. No. 1-B State-Caillou Island, Sec. 19-23s-20e. Drlg. sdy. sh. 4,813 ft.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rlg.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜-in. csg. 2,465 ft.; T.D. 6,564 ft.; P.B. sdtrkd.; T. salt 8,059 ft.; T.D. 8,065 ft.; P.B. to 2,485 ft.; sdtrkd.; drlg. sh. 2,695 ft.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 5 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. 16-in. csg. 110 ft.; 10¾-in. csg. 1,865 ft.; T.D. 6,055 ft.; stk. D.S.; P.B. and sdtrkd. at 3,718 ft.; drld. to T.D. 4,312 ft.; P.B. 1,850 ft.; sdtrkd.; cd. oil sd. 7,222-36 ft.; T.D. 7,242 ft.; 7-in. csg. 7,205 ft. I.P. 670 B.P.D.; ¼-in. ck.

Sun Oil Co. No. 4 Delbert Stark and Brown Cypress Co., Sec. 70-15s-15e. T.D. 7,794 ft.; P.B. 6,764 ft.; sdtrkd.; T.D. 8,268 ft.; stk. D.S.; shot at 8,195 ft.; P.B. 7,642 ft.; sdtrkd. 7,642 ft.; T. D. 8,260 ft.; 9⅝-in. csg. 8,260 ft.; T.D. 8,292 ft.; cleaned hole; found csg. collapsed; recmtd. csg.; W.O.C.

Sun Oil Co. No. 1 Dodge, Sundberry & Latham, Sec. 65-15s-16e. R.U.

Chalkley Field—Cameron Parish

Humble O. & R. Co. No. 3 K. B. Hanzen, Sec. 9-12s-6w. Abd. 3,965 ft.

Humble O. & R. Co. No. 2 Sweet Lake Ld. & Oil Co., Sec. 8-12s-6w. Loc.

Humble O. & R. Co. No. 2 Sweet Lake Ld. & Oil Co., Sec. 8-12s-6w. R.U.

Shell Pet. Corp. No. 1-A Katherine Bel Hanzen, Sec. 15-12s-6w. T.D. 8,975 ft.; prep. to make D.S.T.

Charenton—St. Mary Parish

Commerce Oil Co. No. 1 T. Brulation, Sec. 19-13s-10e. R.U.

Kinsley Oil, Inc., No. 1-B Hertel, Sec. 30-13s-9e. Loc.

Pan American Prod. Co. No. 1 Achee, Sec. 21-13s-9e. Loc.

Pan American Prod. Co. No. 13 Laws Realty Co., Sec. 30-13s-10e. Drlg. sh. 2,212 ft.

Pan American Prod. Co. No. 14 Laws Realty Co., Sec. 30-13s-10e. Drlg. sh. 1,936 ft.

Pan American Prod. Co. No. 5 South Coast, Sec. 30-13s-10e. Drk.

Pan American Prod. Co. No. 13 Veeder, Sec. 30-13s-10e. Bldg. drk.

Cheneyville—Rapides Parish

Sid Richardson No. 1 Well Co., Inc., Sec. 55-1s-2e. T. Cckfld. 5,936 ft.; cg. 8,420 ft.

Texas Canadian Oil Co. No. 1 Myrtle B. Pope, Sec. 4-1s-2e. T.D. 7,065 ft.; 5½-in. csg. 5,816 ft.; perf. csg. 5,745-68½ ft.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16, 13⅜-in. csg. 1,492 ft.; T.D. 7,889 ft.; P.B. 7,275 ft.; sdtrkd. 7,305 ft.; T.D. 8,235 ft.; well blew out; caught fire; cleaned hole to 4,866 ft.; P.B. 2,502 ft.; sdtrkd.; drlg. sd.&sh. 5,425 ft.

Creole—Cameron Parish

Superior Oil Co. No. 6 State-Gulf of Mexico. T.D. 5,986 ft.; P.B.; sdtrkd.; drlg. sh. 6,300 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 21 Community, Sec. 31-10s-2e. T.D. 6,415 ft.; tstg.

Humble O. & R. Co. No. 5 Landry, Sec. 34-10s-2e. Drk.

Kiva Oil Co. No. 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 9 State, Sec. 5-22s-16e. Drlg. sh.&L. 6,870 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp. No. 1 Mrs. C. B. Machine, Sec. 6-2s-3e. Drlg. sh. 3,020 ft.

Amerada Pet. Corp. No. 2 Mrs. C. B. Machine, Sec. 6-2s-3e. Bldg. road.

Gulf Explin. Co. No. 1 Samuel Haas Est., Sec. 8-2s-3e. Loc.

J. E. Jones No. 1 Haas Inv. Co., Sec. 8-2s-3e. T.D. 8,640 ft.; elec. survey showed S.W. in Wlx sd.

O'Meara Bros. No. 1 W. F. Kelley, Sec. 7-2s-3e. 13⅜-in. csg. 15 ft.; W.O. permit.

Sid Richardson No. 4 Haas Inv. Co., Sec. 7-2s-3e. T.D. 8,624 ft.; tstd. S.W.; recmtg. csg.

Sid Richardson No. 1 State Bayou, Sec. 7-7s-2e. Drlg. sh. 7,650 ft.

Sun Oil Co. No. 1 E. A. Townsend, Sec. 8-2s-2e. Reported to cut 110-ft. fault at 3,950 ft.; drlg. sh. 8,092 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. T.D. 12,125 ft.; set 1,926 ft. of 5-in. csg.; set screen and lnr. hung tbg. at 9,853 ft.; pulled tbg.; drld. out to 9,784 ft.; prep. to perf.

Garden Island—Plaquemines Parish

Texas Co. No. 33 State, Sec. 38-23s-33e. 16-in. csg. 551 ft.; drlg. sh. 6,825 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 3 R.E.K., Sec. 40-17s-15e. Cg. sh. 9,320 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 8 Kaufman, Sec. 7-9s-8w. T.D. 7,956 ft.; P.B. 6,837 ft.

Golden Meadows—La Fourche Parish

M. H. Marr and G. H. Vaughn No. 1 B. & D. Unit, Sec. 12-19s-22e. R.U.

Martex Pet. Corp. No. 1 Falgout Holding Co., Inc., Sec. 9-19s-22e. Cd. sh.& sd.; O.S. 2,636-45 ft. and oil sd. 2,645-54 ft.; drlg. sh. 7,295 ft.; rec. 36 stands 42-gr. oil; D.S.T. 7,121-7,202 ft. cd. oil sd. 7,919-64 ft.; cd. S.W. sd. 7,965 ft.; run 7-in. csg.; T.D. 8,524 ft. (corrected); 7-in. csg. 8,524 ft.; perf. csg. 8,163-75 ft.; dropped tbg. in hole; fsg.

Grand Bay—Plaquemines Parish

Gulf Oil Corp. No. 4 Grand Prairie Lve. Dist., Sec. 48-20s-18e. Cd. shaly sd., S.O. 6,137-6,741 ft.; drlg. sdy. sh. 7,302 ft.

Gulf Oil Corp. No. 2 State, Sec. 6-20s-19e. Drlg. sdy. sh. 7,980 ft.

Hackberry—Cameron Parish

F. W. Bennett No. 1 Bickford, Sec. 37-12s-10w. 7-in. csg. 7,037 ft.; T.D. 8,104 ft.; stk. D.S.; fsg.; P.B.; sdtrkd.; perf. csg. 7,104-18 ft.; tstg.

Gulf Oil Corp. No. 25-A Erwin, Sec. 13-12s-10w. Drk.

Superior Oil Co. No. 1 Kaough, Sec. 31-12s-10w. Drlg. sd.&sh. 5,617 ft.

Texas Co. No. 25-B State, Twp. 12s-9w. T. salt 7,440 ft.; T.D. 7,445 ft.; S.D.

Texas Co. No. 26 State, 12s-9w. Loc.

Union Sulphur Co. No. 8 Caldwell, Sec. 37-2s-10w. Drlg. 2,610 ft.

Union Sulphur Co. No. 12 Doiron, Sec. 37-12s-10w. Cg. sh. 7,987 ft.

Union Sulphur Co. No. 13 Doiron, Sec. 27-12s-10w. S.D. 5,221 ft.

Union Sulphur Co. No. 1 Josephine O'Quinn, Sec. 37-12s-10w. T.D. 6,927 ft. sdtrkd.; drlg. sh.&L. 7,369 ft.

Horseshoe Bayou

Texas Co. No. 2 St. Mary Parish Ld. Co., Sec. 37-17s-9e. Loc.

Jefferson Island—Iberia Parish

Phillips Pet. Co. No. 1 Breaux. R.U.

Texas Co. No. 2 Jefferson Island, Sec. 58-12-9e. 18⅝-in. csg. 40 ft.; 7⅝-in. csg. 8,451 ft.; T. salt 9,444 ft.; T.D. 9,458 ft.; run 5⅝-in. csg.

Texas Co. No. 2 State-Lake Peigneur, Twp. 12s-5w. Drlg. sh.&L. 6,730 ft.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, Sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; sdtrkd. at 6,023 ft.; T.D. 6,732 ft.; trying to drill by fish; P.B. 6,104 ft.; W.O.C.; sdtrkd. 6,020 ft.; T.D. 6,056 ft.; 7-in. csg. 2,203 ft. and 10¾-in. csg. 2,108 ft.; sdtrkd.; drld. into old hole; P.B.; sdtrkd. 2,302 ft.; T.D. 6,763 ft.; 7-in. csg. 6,711 ft.; perf. csg. 6,292-6,430 ft.; flwd. some oil, then went dead; P.B. 6,450 ft.; W.O. S.R.; comp.; no ga.; P.B. 6,450 ft.; I.P. 300 B.P.D.; ⅝-in. ck.

W. T. Burton No. 7 Roberia, Sec. 41-9s-2w. 7-in. csg. 7,000 ft.; I.P. 423 B. P.D.; ¼-in. ck.

Glassell & Glassell No. 7 McFarlain, Sec. 41-9s-2w. Drlg. sh. 7,700 ft.

Gulf Oil Corp. No. 41 Arnaudet, Sec. 47-9s-2w. 9⅝-in. csg. 4,557 ft.; drlg. sd.& sh. 5,770 ft.

Shell Pet. Corp. No. 6 Conover, Sec. 40-17s-15e. T.D. 7,507 ft.

Stanolind O. & G. Co. No. 114 Crowley Oil & Mineral Co., Sec. 48-9s-2w. T.D. 3,755 ft.; fsg.

Lafitte—Jefferson Parish

Texas Co. No. 2 Sch. Bd., Sec. 20-17s-24e. T.D. 6,601 ft.; sdtrkd. 6,375 ft.; went back into old hole; trying to sdtrk. at 6,387 ft.; drlg. sh. 6,605 ft.

Texas Co. No. 2 State-Bayou Norman, Sec. 21-17s-24e. 10¾-in. csg. 1,942 ft. drlg. sh. 6,567 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 43 State, Sec. 30-21s-20e. T.D. 4,122 ft.; P.B.; sdtrkd.; drlg. sh. 3,187 ft.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 8 State, Sec. 17s-19e. T.D. 9,600 ft.; P.B. 9,034 ft.; sdtrkd. at 9,034 ft.; drlg. sdy. sh. 9,065 ft.

Lake Mongoulois—St. Martin Parish

Texas Co. No. 7 State, Sec. 10-10s-9e. R.U.

Lake Pelto—Terrebonne Parish

Texas Co. No. 24 State, Sec. 18-23s-18e. T.D. 5,949 ft.; heaving sh.; prep. to sdtrk.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 W. E. Mont, Sec. 32-19s-19e. Loc.

Humble O. & R. Co. No. 1 C. P. Smith, Sec. 53-19s-19e. Drlg. sh. 8,243 ft.

New Iberia—Iberia Parish

Lisbon-Iberia Oil Corp. No. 7 Gulf fee, Sec. 25-12s-7e. T.D. 5,939 ft.; P.B.; sdtrkd.; drlg. sh. 5,703 ft.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co. No. 9 J. P. Duhe, Sec. 26-12s-7e. Drlg. sh.&L. 2,136 ft.

Texas Co. No. 2-A Hanzon, Sec. 54-12s-7e. 7⅝-in. csg. 8,075 ft.; S.D. 8,801 ft.; heaving sh.; P.B. 8,065 ft.; fsg.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 4 Davis, Sec. 45-8s-1e. Drlg. sh. 5,904 ft.

Humble O. & R. Co. No. 4 H. J. Habetz, Sec. 45-8s-1e. Loc.

Humble O. & R. Co. No. 4 Ohlenforst, Sec. 45-8s-1e. T.D. 8,537 ft.; 7-in. csg. on bttm.; perf. csg. 8,294-8,314 ft.; I.P. 680 B.P.D.; ¼-in. ck.

North Tepetate—Acadia Parish

St. Mary Oil Co. No. 1 Dr. H. Jenkins, Sec. 12-7s-2w. Drk.

Port Barre—St. Landry Parish

Y. D. Spill No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.

Western Gulf Prod. Co. No. 1 Watkins, Sec. 4-6s-5e. Bldg. road.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 39 Orleans Lve. Bd., Sec. 13-8s-15e. R.U.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1 Grand Prairie Lve. Dist., Sec. 18-19s-17e. S.D. 8,318 ft.

Gulf Oil Corp. No. 3-A Orleans Lve. Bd., Sec. 7-19s-17e. T.D. 3,480 ft.; fsg.

Gulf Oil Corp. No. 2-A Plaquemines Ld. Co., Sec. 7-19s-17e. 13⅜-in. csg. 1,524 ft.; T.D. 5,061 ft.; fsg.

Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

Gulf Oil Corp. No. 9 State QQ, Sec. 18-19s-17e. Loc.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec 34-15s-19e 18⅝-in. 11,312 ft.; T.A.

Amerada Pet. Corp. No. 4 South Coast Corp., Sec. 34-15s-19e. 18⅝-in. csg. 239 ft.; drlg. sdy. sh. 5,524 ft.

Tide Water Asso. Oil Co. No. 2-A South Coast Corp., Sec. 34-15s-19e. Drlg. sh. &shls. 8,307 ft.

Romeke—Jeff Davis Parish

Humble O. & R. Co. No. 6 J. W. Devilbiss, Sec. 14-9s-4w. Drlg. 147 ft.

Humble O. & R. Co. No. 1 Fergusen, Sec. 13-9s-4w. T.D. 8,008 ft.; abd.

Sorrento—Ascension Parish

Sorrento Synd. No. 1 L. L. Bernard, Sec. 27-10s-4e. R.U.

South Houma—Terrebonne Parish

Shell Pet. Corp. No. 3 Peters. Drlg. sh. 4,412 ft.

South Romeke—Jeff Davis Parish

Continental Oil Co. No. 1 Calcasieu Natl. Bnk., Sec. 36-10s-4w. Drlg. sh. 2,210 ft.

Valentine—La Fourche Parish

T. G. Markley and Mohawk Oil Corp. No. 1 Deusson Hrs., Sec. 100-17s-20e. Drlg. sh. &shils. 3,525 ft.

Pan American Prod. Co. No. 20 Harang, Sec. 8-17s-20e. Drlg. sh. 4,117 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 2 Fontenot-Ladeau, Sec. 45-3s-2e. Drlg. sh. 3,220 ft.

Continental Oil Co. No. 3 Haas, Sec. 44-3s-2e. Drlg. sh. 9,543 ft.

Continental Oil Co. No. 3 Ludeau-Haas, Sec. 44-3s-2e. Drk.

Continental Oil Co. No. 4 Pierre McDaniel, Sec. 45-3s-2e. T.D. 9010 ft.; fsg.

Continental Oil Co. Sec. 44-3s-2e. Loc.

Continental Oil Co. No. 1 Tate, Sec. 45-3s-2e. Oil sd. 8,891-8,904 ft.; T.D. 10,880 ft.; P.B. to 8,920 ft.

Continental Oil Co. No. 3 Ed Tate, Sec. 45-3s-2e. T.D. 9,090 ft.; run csg.

Texas Co. No. 3 Marman fee, Sec. 45-3s-2e. Drlg. sh. 8,920 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 5 Buras Lv. Bd., Sec. 23-21s-30e. Loc.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 4 Calcasieu Natl. Bnk., Sec. 12-9s-6w. T.D. 8,905 ft.; P.B. 8,860 ft.; fsg. for tbg.; P.B.; sdtrkd.; T.D. 8,905 ft.; perf. csg. 8,897-8,900 ft.; I.P. 40 bbls.; 13 hrs.; 14/64-in. ck.

Union Sulphur Co. No. 1 Dovaran-O'Connor, Sec. 12-9s-6w. T.D. 9,372 ft.; 7-in. csg. 9,372 ft.; perf. csg. 9,296-9,300 ft.; I.P. 142 bbls., 32.6-gr. oil with 50% S.W.; ⅝-in. ck.

Union Sulphur Co. No. 1 M. F. Johnson, Sec. 12-9s-6w. Drk.

Union Sulphur Co. No. 2 Miller, Sec. 7-9s-5w. Loc.

Union Sulphur Co. No. 3 Mrs. O'Miller, Sec. 7-9s-5w. Drk.

Union Sulphur Co. No. 2 Osmon, Sec. 7-9s-5w. T.D. 9,111 ft.; P.B. 5,910 ft.; sdtrkd.; T.D. 8,868 ft.; P.B. 8,467 ft.; prep. to sdtrk.

S. LOUISIANA WILDCATS

Acadia Parish

T. G. Markley No. 1 M. L. Vincent, Sec. 19-17s-1w. 10¾-in. csg. 1,416 ft.; drlg. sh.&L. 8,323 ft.

T. T. Tolson et al No. 1 J. Turner, Sec. 25-7s-1e. M.I.M.

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Allen Parish

Bel Oil Corp. No. 1 J. A. Bel, Sec. 23-6s-3w. Cd. gas sd. 6,257-87 ft.; S.W. sd. 6,287-97 ft.; T.D. 9,010 ft.; run 7-in. csg.

Assumption Parish

Shell Oil Co. No. 1 Ellis, Sec. 66-16s-14e. R.U.

Beauregard Parish

Atlantic Ref. Co. No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.

Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.

Atlantic Ref. Co. No. 1-A Rice Ld. & Lbr. Co., Sec. 22-3s-11w. T.D. 4,561 ft.; dropped csg. in hole; fsg.

Standard Oil Co. of Calif. No. 1 Long Bell Lbr. Co., Sec. 23-4s-9w. Drlg. sh. 1,519 ft.

Calcasieu Parish

Humble O. & R. Co. No. 1 Edgewood Ld. & Logging Co., Sec. 32-7s-10w. Drk.

David B. MacDaniel No. 2 Sch. Ld., Sec. 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.; T.D. 7,890 ft.; S.D.

Union Sulphur Co. No. 1 Ulrich, Sec. 19-9s-10w. R.U.

Cameron Parish

Superior Oil Co. et al No. 1 State, Grand Lake, Sec. 24-13s-4w. T.D. 9,179 ft.; 7-in. csg. 9,179 ft.

Union Sulphur Co. No. 1 Sweet Lake Ld. Co., Sec. 9-12s-7w. Drlg. sh. 7,793 ft.

East Baton Rouge Parish

Danciger O. & R. Co. No. 1 D. E. McInnis, Sec. 58-7s-1e. Bldg. road.

Gulf States Expl. Co. No. 1 Greater University Lds., Sec. 48-7s-1e. Drlg. wtr. sd. 2,635 ft.

Evangeline Parish

Continental Oil Co. et al No. 1 Mrs. Lillie Manuel, Sec. 33-4s-1w. Drlg. sh. 7,568 ft.

Iberia Parish

Texas Co. No. 3-B State-Vermilion Bay Twp. 16s-5e. T. salt 5,970 ft.; B. salt 7,540 ft.; T.D. 7,714 ft.; run 9⅝-in. csg.

Iberville Parish

Housh & Thompson No. 1 Kessler & Folse, Sec. 40-11s-13e. M.I.M.

Humble O. & R. Co. No. 1 Iberville Mortgage Loan Co., Inc., Sec. 74-7s-10e. 20-in. csg. 208 ft.; drlg. sh. 9,556 ft.

Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-8s-2e (tight well). Drlg. 9,936 ft.

Jeff Davis Parish

R. M. Bleakie et al No. 1 Lack-Moore Co., Ltd., Sec. 29-7s-6w. 13⅜-in. csg. 65 ft.

Union Sulphur Co. No. 1 H. B. Tietje Sec. 36-7s-4w. Drlg. sh. 8,407 ft.

La Fourche Parish

Gulf Oil Corp. No. 1 Grandison Ld. Co., Sec. 14-20s-23e. T.D. 8,241 ft.; run 9⅝-in. csg.

J. Perry Scranton No. 2 Martinez, Sec. 132-15s-17e. Bldg. rd.

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. 9⅝-in. csg. 10,744 ft.; drlg. sh. 12,535 ft.

Orleans Parish

W. T. Burton No. 3-B Faubourg de Montluzin, Sec. 1-11s-13e. Dredge canal.

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 9,000 ft.; run 7⅝-in. csg.

W. T. Burton No. 3 L.&N.R.R., Sec. 20-11s-14e. Loc.

W. T. Burton No. 2 State-Lake Pontchartrain, Twp. 10s-10e. Loc.

Plaquemines Parish

Texas Co. No. 1 L.L.&E., Bastian Bay, Sec. 43-20s-28e. 9⅝-in. csg. 9,540 ft.; T.D. 10,662 ft.; P.B. 9,900 ft.; sdtrkd. 9,895 ft.; drlg. sdy. sh. 10,504 ft.

Pointe Coupee Parish

Falcon-Seaboard No. 1 J. H. Hobgood, Sec. 8-1s-7e. 10¾-in. csg. 1,456 ft.; T. Sparta 6,080-6,100 ft.; first sd. 6,108-18 ft.; no show; drlg. sh. 6,786 ft., Cane River.

Rapides Parish

E. J. Gann et all No. 1 Lee Lbr. Co., Sec. 9-5n-3e. T.D. 3,773 ft.

Gulf States Expln. Co. No. 1 Jack Cappel, Sec. 37-4n-4w. R.U.

Lyons & Neely No. 1 W. P. Aertker Sec. 16-4n-1e. T. Wlx. 4,563 ft.; T.D. 4,775 ft.; abd.

St. Bernard Parish

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,238 ft.; lost core bbl.; P.B. sdtrkd. 8912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; W.O.C.

Vendome Pet. Corp. No. 1 Kenilworth Plantation, Sec. 69-13s-14e. 9⅝-in. csg. 10,889 ft.; cd. 10,880-10,889 ft., sdy. sh.; gas odor; cd. gas sd. 10,880-11,000 ft.; T.D. 11,429 ft.; 7-in. csg. 11,429 ft.; perf. csg. 11,200-20 ft.; flwd. S.W.; no show oil or gas; pulled tbg. in two; rmg.; P.B. 10,736 ft.; perf. csg. 10,625-35 ft.; flwg. 466 B.F.P.D.; 12/64-in. ck.; T.P. 1,400 lbs.; C.P. 800 lbs.; 0.1% 36% fluid b.s.&S.W.; 60% 24-gr. oil; tstg.; killed; reperf. csg. 10,596-10,606 ft.; flwd. 120 B.F.P.D.; ¼-in. ck.; 70% oil, 30% B.s.&wtr.; T.P. 980 lbs.; C.P. 1,280 lbs.; killed well; perf. csg. 10,500-10,606 ft., 10,606-12 ft., 10,612-69 ft., 10,619-75 ft.; sqsd. perf. with cmt.; W.O.C.

Vendome Pet. Co. No. 2 Kenilworth Plantation, Sec. 59-13s-14e. Bldg. rd.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec. 39-14s-20e. 9⅝-in. csg. 8,975 ft.; T.D. 10,787 ft.; twisted off D.S.; fsg.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. 9⅝-in. csg. 8,534 ft.; T.D. 11,002 ft.; 7-in. csg. 11,002 ft.; P.B. 10,943 ft.; perf. csg. 10,928-40 ft.; flwd. 12 bbls. dist.; 4 hrs.; 11/64-in. ck.; T.P. 4,500 lbs.; C.P. 4,600 lbs.; killed; drlg. hd. sd. 11,011 ft.

St. Martin Parish

Magnolia Pet. Co. No. 1 Mercelin Francois, Sec. 8-10s-7e. T.D. 10,002 ft.; abd.

Roper & Todd No. 1 Levert Plantation, Lot 40, Sec. 42-10s-7e. S.D. 7,457 ft.

Texas Co. No. 12 St. Martin, Sec. 21-8s-7e. Driving piling.

St. Mary Parish

Phillips Pet. Co. No. 1 Whitney Natl. Bnk., Sec. 13-15s-12e. T.D. 11,710 ft.; abd.

St. Tammany Parish

Honey Island Dev. Corp. No. 1 W. C. Forbes, Sec. 33-7s-15e. Drlg. 100 ft.

Terrebonne Parish

Texas Co. No. 2 State-Coon Point, Twp. 23s-14e. 13⅜-in. csg. 1,900 ft.; drlg. sdy. sh. 3,376 ft.

Vermilion Parish

La. Ld. & Explg. Co. No. 1 La. Fur. Co., Sec. 21-15s-1e. Drlg. sh. 2,765 ft.

TEXAS

Week Ending May 6

GULF COAST FIELDS

Old Ocean—Brazoria County

Harrison & Abercrombie No. 5 Armstrong, Polly & Chance Sur. T.D. 10,365 ft.; comp.; no ga.

Harrison & Abercrombie No. 2 Larsen et al, C. Breen Sur. R.U.

Harrison & Abercrombie No. 1 C W Markle, Polly & Chance Sur. 9⅝-in. csg. 7,016 ft.

Harrison & Abercrombie No. 4 Chenault, C. Breen Sur. 13⅜-in. csg. 1,523 ft.; T.D. 10,444 ft.; 7-in. csg. on bttm.

Sun Oil Co. No. 1 Borsodi-Elkins, C. Breen Sur. 18⅝-in. csg. 121 ft.; 9⅝-in. csg. 7,010 ft.; drlg. sh. 8,520 ft.

Sun Oil Co. No. 3 Campbell, C. Breen Sur. Loc.

Cedar Point—Chambers County

Standard Oil Co. of Calif. et al No. 46-120 State. Loc.

Standard Oil Co. of Texas et al No. 56-94 State. T.D. 6,950 ft.; P.B. 4,300 ft.; sdtrkd.; cd. sd. 5,930-6,050 ft.; T.D. 6,399 ft.; 7-in. csg. 4,400 ft.; perf. csg. 3,957-70 ft.; tstd. S.W.; made sqze. job; W.O.C.; perf. csg. 2,838-46 ft.; tstd. S. W.; prep. to test 4,300-ft. sd.

West Columbia—Brazoria County

Texas Co. No. 32 Abrams, G. Tennille Sur. Drk.

Texas Co. No. 5 Goldman, G. Tennille Sur. T.D. 4,381 ft.; cutting and pulling D.P.; cleaned hole to 3,029 ft.; prep. to sdtrk.

Thompson—Fort Bend County

H. M. Naylor No. 1 W. L. Moody, H. Chrisman Sur. Loc.

H. M. Naylor No. 2 Musselman, H. Chrisman Sur. R.U.

Capien—Galveston County

Sun Oil Co. No. 1 Hudnall, Finn & Foreman, S. F. Hughes Sur. Rec. 115 ft. P.L.O.; D.S.T. 7,135-48 ft.; cg. S.W. sd. 7,250 ft.; cd. sd., thin sh., strks., S.O. 7,376-7,416 ft.; T.D. 7,536 ft.; 7-in. csg. on bttm.

Dickinson—Galveston County

Pure Oil Co. No. 1 Franz Kohfeldt et al, T. W. Johnson Sur. Drlg. sh. 1,810 ft.

League City—Galveston County

Geo. H. Echols No. 4 Ross-Stewart, Perry & Austin Sur. No. 3. Drlg. sh. 7,312 ft.

Phillips Pet. Co. No. 1 Bertha Lobit Wilson, Perry & Austin Sur. T.D. 10,427 ft.; 7-in. csg. 9,385 ft.; perf. csg. 8,932-48 ft.; tstg.

Phillips Pet. Co. No. 1 Bryan, Perry & Austin Sur. R.U.&S.D.

Salt Dome Oil Corp. No. 3 Ross-Stewart, Perry & Austin Sur. 10¾-in. csg. 3,100 ft.; drlg. sh. 6,412 ft.

West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Bammel—Harris County

Hamill & Smith No. 1-B Zapp, Joseph Farwell Sur. R.U.

H. M. Harrell et al No. 2 Ehrhardt, H. T.&B. Sur. R.U.

Clear Lake—Harris County

Humble O. & R. Co. No. 7-C Humble-West fee, J. Lindsey Sur. T.D. 5,841 ft.; T. sd. 5,709 ft.; perf. csg. 5,823-35 ft.; make sqze. job; reperf. csg.; P.B. 5,812 ft.; W.O.C.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.

Eureka—Harris County

Jack Frazier No. 1 W. T. Helberg, H. Reinerman Sur. R.U.

J. W. Frazier No. 3 Lena Dunn, H. Reinerman Sur. 10¾-in. csg. 2,509 ft.; drlg. sh. 7,312 ft.

Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.

Means & McGehee No. 1-F Laura Lackner. Drk.

Fairbanks—Harris County

Sinclair Prairie Oil Co. No. 2 Jahnke, S. Lewis Sur. 9⅝-in. csg. 1,200 ft.; drlg. sd.&sh. 6,086 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 23 Humble-West fee, Luke Hemenway Sur. Drlg. sh. 5,720 ft.

Humble O. & R. Co. No. 24-B Humble-West fee, Luke Hemenway Sur. T.D. 6,416 ft.; P.B. 6,157 ft.

Humble O. & R. Co. No. 27-B Humble-West, Luke Hemenway Sur. Drlg. 4,612 ft.

Humble O. & R. Co. No. 2 West Prod.-Herman Hospital, T. Choate Sur. Drlg. sh. 6,020 ft.

Satsuma Field—Harris County

Amerada-Stanolind O. & G. Co. No. 1-A W. S. Jacobs, W.C.R.R. Sur. No. 2. S.D. 6,986 ft.; T.A.

Stanolind O. & G. Co. et al No. 2-A Jacobs, W.C.R.R. Sur. Loc.

H. E. Williams et al No. 2 Behne, W.C. R.R. Sur. No. 2. Drlg. 2,310 ft.

Cheek—Jefferson County

Humble O. & R. Co. No. 3 Broussard Tr., C. Hillebrandt Sur. T.D. 7,725 ft.; tstg.

Humble O. & R. Co. No. 4 Jefferson Ld. Co., C. Hillebrandt Sur. Drlg. sh. 2,212 ft.

Shell Pet. Corp. No. 1 Steinhagen, Wm. Carr Sur. Made sqze. job; T.D. 7,725 ft.; flwd. 87 B.O. in 15 hrs.; ¼-in. ck.

Clam Lake—Jefferson County

Shell Oil Co. Inc., No. 4 McFaddin, S. A. Pace Sur. Drlg. sh. 367 ft.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. 18⅝-in. csg. 130 ft. T.D. 7,650 ft.; cmtd. 9⅝-in. csg. on bttm.; drlg. sh. 8,539 ft.

Esperson—Liberty County

General Crude Oil Co. No. 2-B Esperson, A. McNeil Sur. 10¾-in. csg. 1,396 ft.; cd. sd.&sh. S.O.&G. 6,955-7,035 ft.; T.D. 7,350 ft.; run csg.

Hardin—Liberty County

Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.

Humble O. & R. Co. No. 2 Partlow, H. B. Johnston Sur. T.D. 7,580 ft.; W.O.C.

Orange—Orange County

Gulf Oil Corp. No. 2-D Chesson, Wm. Dyson Sur. T.D. 5,886 ft.

Gulf Oil Corp. No. 10-A Winfree, Wm. Dyson Sur. Loc.

John Mayo No. 1 M. J. Williams, Dyson Sur. R.U.

Union Prod. Co. No. 5 Lutcher Moore, J. Dyson Sur. T.D. 7,304 ft.; 7-in. csg. 6,038 ft.; perf. csg. 5,955-58 ft.; tstd. S.W.; reperf. csg.

Port Neches—Orange County

Texas Co. No. 14 H. J. Kuhn, Mary E. Hall Sur. Drlg. L. 5,478 ft.

Ace—Polk County

Dick Schwab No. 1-C Kirby-West Lbr. Co., G. A. Thomas Sur. Loc.

Shell Pet. Corp. No. 2 Doucett, P. A. Sublett Sur. Loc.

Segno—Polk County

Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.

Gulf Oil Corp. No. 1 Ragan, L&G.N. Sur. No. 15. R.U.

Gulf Oil Corp. No. 5 Ragan. L&G.N. Sur. No. 15. Drlg. sh.&L. 4,930 ft.

Gulf Oil Corp. No. 18 Wing, L&G.N. Sur. Drlg. sd.&L. 7,920 ft.

Humble O. & R. Co. No. 12-B Kirby Lbr. Co., M. Victor Sur. 10¾-in. csg. 2,166 ft.; drlg. sh. 6,137 ft.

Spurger—Tyler County

Republic Prod. Co. No. 20 fee, N. Hurd Lge. Drlg. sh. 6,036 ft.

Katy—Waller County

Magnolia Pet. Co. No. 1 Allsup, E. B. Conch Sur., Sec. 108. T.D. 7,383 ft.; 5½-in. csg. on bttm.

GULF COAST WILDCATS

Brazoria County

Brown & Wheeler No. 1 Lloyd Callahan, Lot 194, J. M. O'Donnell Sur. Loc.

Crosby Drlg. Co. No. 1 Geo. S. Wilson, A. C. Reynolds Sur. 10¾-in. csg. 2,925 ft.; T.D. 9,504 ft.; 7-in. csg. on bttm.; perf. csg. 9,463-69 ft.; flwd. S.W.; ¾-in. csg. ck.; perf. csg. 8,870-80 ft.; flwd. S.W.; perf. csg. 8,842-52 ft.; cg. sh. 9,980 ft.

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.

Hamman Explt'n. Co. No. 1 Darrington, Achilles McFarland Sur. 10¾-in. csg. 1,200 ft.; 7-in. csg. 8,887 ft.; milling on core bbl.

Hamman Explt'n. Co. No. 2 Darrington State Prison Farm, F. Bingham Sur. Dig pits.

Texas Co. No. 7 Freeport Sulphur Co., C. Ariola Sur. 10-in. csg. 1,168 ft.; drlg. sh. 3,220 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Housh & Thompson No. 1 Robbins, Edw. T. Branch Sur. 10¾-in. csg. 2,247 ft.; drlg. sh. 7,720 ft.

Fort Bend County

Atlatl Roy. Corp. and Adams O. & G. Co. No. 1 C. H. Stancl, F. F. E. Alcorn Sur. Spd.

Royal O. & G. Co. et al No. 1 W. T. Bertrand, J. Wilkins Sur. Drlg. sh. 2,300 ft.

Harris County

John Deering No. 1 Ridgeview Farms, Duckworth Sur. M.I.M.

Jack Frazier No. 3 Lena Griffith, Whitney Britton Sur. M.I.M.

Housh & Thompson No. 1 Rhe, A. McCormick Sur. 10¾-in. csg. 537 ft.; drlg. sh. 5,612 ft.

Midwest Royalty Co. No. 1 Westmoreland Farms, Lot 12, Blk. 39, James Wells Sur. Cg. sh. 9,929 ft.

J. H. Woodard, Jr., No. 1 Miller Est., John Skorupski Sur. Drlg. sh. 5,036 ft.

Texas Gulf Prod. Co. No. 1 Weary, C Lot 2, E. Fareas Sur. 10¾-in. csg. 896 ft.; T.D. 7,664 ft.; P.B. 6,860 ft.; 5½-in. csg. 6,860 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. pulled in two; S.D.

Humble O. & R. Co. No. 16-B McFaddin Beach State, Gulf of Mexico, 660 ft. NW of No. 13-B. Loc.

Liberty County

Stanolind O. & G. Co. No. 1 G. M. Flowers, L&G.N.R.R. Sur. Drlg.

Woodley Pet. Co. No. 1 Barrett, Rebecca Coleman Sur. Drlg. sd.&sh. 1,110 ft.

Madison County

A. O. Phillips et al No. 1 E. F. McWhorter, Amy Boatright Sur. Loc.

Matagorda County

Continental Oil Co. No. 1 Savage, Daniel Yeamans Sur. Bldg. road.

Pierce Est. No. 1-F fee, B. J. Rawls & O. Stout Sur. T.D. 8,014 ft.; P.B.; sdtrkd. at 4,435 ft.; T.D. 4,801 ft.; abd.

Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. 9⅝-in. csg. 8,502 ft.; T. gas sd. 9,313 ft.; T.D. 9,582 ft.; 7-in. csg. 9,582 ft.; perf. csg. 9,300-18 ft.; flwg. gas, mud, and S.W.; ¼-in. ck.; T.P. 2,200 lbs.; C.P. 1,950 lbs.; killed; reperf. csg. 8,940-65 ft.; C.O.; showing wash wtr.; ¼-in. ck.; flwd. 150 B.F.P.D., 75% S.W., 25% dist.; 11/64-in. ck.; T.P. 3,800 lbs.; C.P. 3,900 lbs.; killed; P.B. 9,039 ft.; reperf. csg. 8,620-45 ft.; flwd. 58 B.F., 34 bbls. dist., 24 bbls. S.W.; well went dead; W.O.

Montgomery County

O. C. Garvey et al No. 1 Foster Lbr. Co., Neil Martin Sur. Drlg. sd.&sh. 4,239 ft.

Orange County

C. B. Bunte, Inc., et al No. 1 Miller Vidor Lbr. Co., John M. Swisher Sur. Loc.

San Jacinto County

J. W. Frazier No. 1 Annie Smith, J. D. Martinez Sur. No. 10. 10¾-in. csg. 840 ft.

Tyler County

J. C. Bonham No. 1 Kountze, F. M. McReynolds Sur. Drlg. sh. 4,165 ft.

Wharton County

Magnolia Pet. Co. No. 1 Borden, Henry Griffith Lge. 13⅜-in. csg. 1,322 ft.

S. W. TEXAS WILDCATS

Bastrop County

Fuchs, Millner et al No. 1 Millner, E. Standifer Sur. Drlg. L. 1,650 ft.

J. F. Jourdan No. 1 Lawhorn, E. Standifer Sur. Drlg. sh. 830 ft.

Marts & Beaven No. 1 Chiles, Wm. McLaughlin Sur. No. 11. Drlg. sh. 2,620 ft.

Bee County

Dirks Bros. No. 1 Page, Thos. K. Pilkington Sur. R.U.

Humble O. & R. Co. No. 1 Fox, Michael Fox Sur. T.D. 5,512 ft.; abd.

New MAC
PLUNGER BARREL
for 2-inch tubing

Outlasts three ordinary barrels, as Steel Plunger works in and out of Cast Iron Barrel as much as 2 feet on the up and down stroke and more if desired, thus flushing itself free of sand or gypsum.

Reversible Valve Body and Plunger make for lowest upkeep.

Furnished with 2-Cup Standing Valve and with, or without, Garbutt Rod.

Save, with the New "MAC"!

Ask for complete details and price list.

McGREGOR
WORKING BARREL COMPANY
Bradford, Pa., U.S.A.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.
G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

Fred Beatty No. 1 Joppich, Iginio Tejado Sur. No. 186. 6⅝-in. csg. 575 ft., S.D. 1,120 ft.; prep. to resume drlg.
H. G. Krumm No. 1 Kempf, Samuel McCollough, Jr., Sur. 54. T.D. 770 ft.; I.P. 3 bbls.; pmpg.
L. L. Skaggs No. 1 Braubach, Fernando Rodriquez Sur. S.D. 325 ft.

Blanco County

H. C. McCart No. 1 Geo. Lester, Newton Carson Sur. No. 34. S.D. 70 ft.

Caldwell County

Ben H. Fuchs No. 1 Chamberlain, Jos. Burleson Sur. S.D. 834 ft.

De Witt County

Richardson et al No. 1 W. D. McCurdy, John Hunt Sur. T.D. 150 ft.

Duval County

J. B. Blanchard et al No. 1 Parr, T. C. Rogers Sur. No. 298. R.U.
W. L. Catlin et al No. 1 Louis Escapule. J. Poitevent Sur. No. 73. Loc.
Lee Corkill et al No. 1 Tomkin, P. Benavides Sur., Sec. 30. T.D. 4,510 ft.; S.D. 505 ft.; abd.
G. C. Glasscock No. 1 Nicholas Garcia. Santa Cruz De Concepcion gr. T.D. 6,505 ft.; abd.
Gorman-Yoakam & Daubert No. 1 M. K. West, L. Gunter Sur. No. 68. T.D. 3,142 ft.; abd.
Frank Gravis No. 3 Schallert, Seale Morris & Seale Sur. No. 2550. T.D 3,168 ft.; P.B. 1,800 ft.; sdtrkd.; drld. into old hole 2,000 ft.; T.D. 3,168 ft.; set plug; W.O.C.; S.D. 2,869 ft.
H. H. Howell No. 1 Atlee Parr, San Andres gr. Cg. sh. 5,936 ft.
P. L. Keller et al No. 1 L. Gruy Est., J. Poitevent Sur. No. 391. Drlg. 310 ft.
Magnolia Pet. Co. No. 1 Denman, Santos Garcia gr. T.D. 6,135 ft.; abd.
Wm. Nichols et al No. 1 Tom Graham, Cuadrilla Irrg. Sur., Sec. 572. Loc.
Republic Prod. Co. No. 2 Society for the Propagation of the Faith, J. Poitevent Sur. T.D. 4,113 ft.; abd.
Rutland Oil Co. No. 1 Atlee Parr, San Andres gr. T.D. 6,145 ft.; 7-in. csg. 6,050 ft.; perf. csg. 5,955-60 ft.; swbd. wash wtr., brackish taste; S.S.O.; reperf. csg. 5,955-58 ft.; tstg.
Texas Gulf Prod. Co. No. 1 John Dunn Diego Ynojosa gr. T.D. 6,022 ft.; abd.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D

Edwards County

O. L. Alderfer and C. W. Davis No. 1 J. A. Earwood, C.C.S.D.&R.G.N.G.R.R. Sur., Sec. 158. S.D. 80 ft.

Goliad County

Cron & Gracey et al No. 1 O. G. Dreier, B.S.&F. Sur. No. 7. T.D. 5,190 ft.; set 1,320 ft. of 7-in. lnr. at 5,190 ft.

Gonzales County

H. F. Hinds No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; T.D. 2,713 ft.; abd.

Guadalupe County

H. H. Coffield No. 1 Wells, C. C. Carrier Sur. Drlg. sh. 2,185 ft.
John Hueners No. 1 Boecker, John Baker Sur. No. 26. S.D. 915 ft.
Midwestern Pet. Co. No. 3 W. K. Anderson, Green Dewitt Sur. Cd. sat. L. 2,355-66 ft.; T.D. 2,366 ft.; run 7-in. csg.
Trio Oil Co. No. 1 Jahns Herman. Jose K. Davis Sur. No. 12. T.D. 3,049 ft.; P.B. to sdtrk.

Hidalgo County

Rowan & Hope No. 1 Antonio Bazan, San Ramon gr., Juan Faris Sur. No. 4. Cg. sh. 6,485 ft.

Jim Hogg County

A. W. Dillard No. 1 Julian Ramirez, John S. Williams Sur. S.D. 3,010 ft.
Imperial Oil Co. No. 1 Jose M. Gutierrez, H. Rodriquez Sur. No. 142. 10-in. csg. 40 ft.
Johnson & Robinson No. 1 Palacios Mary Montgomery Sur. S.D. 2,843 ft.
Neal and Shaw No. 1 Armstrong, Hooper & Wade Sur. T.D. 4,010 ft.; abd.

Jim Wells County

Bridwell Oil Co. No. 1 M. W. Smith, La Trinidad Sur. Drlg. sh. 3,412 ft.
F. A. Gillespie & Sons No. 1 Shear, Blk. 24, Adam Beatty & Moulton Sur. 10¾-in. csg. 999 ft.; S.D. 6,590 ft.; P.B. 4,994 ft.; sdtrkd.; redrld. 5,444 ft.; 25-min. D.S.T. 5,426-44 ft.; rec. 760 ft. P.L.O.; T.D. 5,454 ft.; perf. csg. 5,439-46 ft.; I.P. 108 B.P.D.; ½-in. ck.; T.P. 1,500 lbs.; C.P. 2,025 lbs.; gr. 43.8.
L. Glasscock No. 1 Robt. Adams, Juan Hernandez Sur. Loc.
Tom Graham No. 1 Zappe, Lavaca gr. Cg. 4,676 ft.
Gravis & Doran No. 1 Lillian Mull, J. Poitevent Sur. 10¾-in. csg. 595 ft.; T.D. 5,330 ft.; run csg.; 12-min. D.S. T. 5,307-30 ft.; 7-in. csg. 5,325 ft.; I.P. 161 B.P.D.; 9/64-in. ck.; T.P. 900 lbs.; C.P. 1,325 lbs.; gr. 42.1.
Frank Gravis, Inc., No. 1 O. L. Richardson, J. Poitevent Sur. R.U.
Rich Irwin et al No. 1 Garcia Est., R. J. Kleberg Sur. Drlg. sh. 3,820 ft.
Lewis Prod. Co. No. 1 Robt. Adams, Robt. Adams Sur. Drlg. sh.&sd. 628 ft.
Magnolia Pet. Co. No. 1 J. O. Maun, Lot 6, Blk. 11. Drlg. 1,720 ft.
Parr Drlg. Co. No. 1 W. K. Hoffman, LaVaca gr., Sec. 8. T.D. 5,806 ft.; 5½-in. csg. 5,806 ft.; perf. csg. 5,622-37 ft.; flwg. 1½ bbls. 45-gr. oil per hr.; 5/64-in. ck.; T.P. 370 lbs.; C.P. 1,285 lbs.
W. R. Quinn et al No. 1 D. M. and Fritz Pundt, T. C. Wright Sur. Drlg. 1,512 ft.
G. L. Ramsey No. 1 O. L. Richardson, J. Poitevent Sur. R.U.
Sheli Pet. Corp. No. 1 2 Von Blucher, Lucinda Best Sur. Drlg. sh. 6,960 ft.
Texas Gulf Prod. Co. No. 1 A. M. Perez, La Tinaja de Lara gr. T.D. 6,862 ft.; 5½-in. csg. 6,555 ft.; perf. csg. 6,485-6,530 ft.; well went dead; W.O.
R. S. Waldron et al No. 1 C. B. and Peck Welhausen, Geo. Rounds Sur. Drlg. sdy. sh. 3,166 ft.

Karnes County

H. Aid et al No. 1 Kaiser, J. Poitevent Sur. T.D. 2,500 ft.; abd.

Kendall County

C. M. Dewey No. 2 Seidensticker, R. Davis Sur. No. 20. S.D. 590 ft.

Kenedy County

Humble O. & R. Co. No. 2 Kenedy, E. L. Penascal gr. Drlg. sh. 1,726 ft.

Kimble County

W. S. Kelly No. 1 A. L. Bierchwale, D. Lloyd Sur. Loc.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T.D. 6,404 ft.; acd.; R.U.; pmpd. 100 bbls. fluid; 36 hrs.; 3 bbls. oily emulsion, bal. S.W.; dpnd. to T.D. 6,424 ft.; hung tbg. at 6,400 ft.; S.I.; showing 250 lbs. pres. on csg.

Live Oak County

Harry Hotchkin No. 1 Hamilton Bros., H.&G.N.R.R. Sur. No. 1. Cg. 1,610 ft.
Walter Nelson et al No. 1 Paul Zomzow, R. Triplet Sur. No. 152. T.D. 3,200 ft.; abd.
L. W. Stieren No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

Mid-Western Pet. Corp. No. 1 C. E. Byrne, Geo. Pittuck Sur. S.D. 1,250 ft.
C. D. Scarborough and Biglane No. 1 Paul Foyt, James Garner Sur. No. 6. S.D. 1,228 ft.; 7-in. csg. 1,251 ft.
Shumway & Burns No. 4 Shiner, Sec. 39 of Shumway subd. of Shiner ranch. T.D. 1,863 ft.; abd.

Medina County

F. J. Carle No. 1 Tom J. Bendale, J Barnhart Sur. No. 593. T.D. 1,210 ft.; abd.
J. I. and J. W. Cromwell No. 1 Tschirhart, I. J. Rogers Sur. No. 18. S.D. 1,110 ft.
Victor Ziegler No. 1 Paul Haby, Wm. G. Still Sur. No. 1. S.D. 1,000 ft.

Nueces County

O. W. Killam et al No. 1 F. J. Smith, E. L. Rincon de Corpus Christi gr., Sec. 30. Drlg. sh. 7,350 ft.
Seaboard Oil Co. No. 1-A John LaPrelle, Lot 9, Roberts & White subd. Rec. 630 ft. P.L.O.; D.S.T. 4,347-61 ft.; drlg. sh. 6,548 ft.

Refugio County

Humble O. & R. Co. No. 3 Laura Thomas, Patrick Downey Sur. Loc.
Quintana Pet. Corp. No. 10 Williams, C. E.P.I.&M. Co. Sur. Drlg. (no report; tight well).
Royal O. & G. Co. et al No. 1 Jurica, Esteban Lopez Sur. Drlg. sh. 4,167 ft.

San Patricio County

Seaboard Oil Co. No. 1 Person, A.B.&M. Sur. No. 6. Drlg. 3,420 ft.
Smith O. Morgan No. 1 H., S. J. Pollan Sur. Abd. 7,007 ft.

Starr County

C. L. Foster No. 1 H. Garza, Juan Salinas Porc. No. 71. Drlg. sh. 620 ft.
Magnolia Pet. Co. No. 1 M. M. Garcia, S. Vela Porc. No. 90. T.D. 6,104 ft.; well tried to blow out; cleaned hole; W.O.
Rowan & Hope et al No. 1 Cameron, Sur. No. 228. Drlg. sdy. sh. 3,980 ft.
Whitfield & Southern No. 1 Carruth, S. Vela, Porc. No. 90. 10-in. csg. 300 ft.

Travis County

E. A. Fields and M. T. Paine No. 1 Pete Carlson, Robt. Fletcher Sur. No. 69. T.D. 1,235 ft.; abd.
Oscar Raesz et al No. 1 J. W. Swahn, Phillips McElroy Sur. No. 16. S.D. 566 ft.

Webb County

Johnson and Robinson No. 1 Mabel Adami, A.B.&M. Sur. No. 35. T.D. 999 ft.; W.O. csg.
Rodney DeLange No. 1 Garcia, S.M.&S. Sur. No. 337. T.D. 3,012 ft.; 5½-in. csg. 2,031 ft.; perf. csg. 1,974-82 ft.; tstd. gas; killed.
Smith & Storey No. 1 Houston Oil Co., R. O. Barnsley Sur. No. 24. 5½-in. csg. 1,830 ft.; perf. csg. 1,834-65 ft.; S.D. 2,475 ft.

Willacy County

Cockburn et al No. 1 Yturria Ld. Livestock Co., San Juan de Carricitos gr. 10¾-in. csg. 1,228 ft.; cg. oil sd. 4,857-67 ft.; D.S.T. rec. 60 ft. oily mud; T. D. 7,714 ft.; set plug, sdtrk.; drlg. sh. 7,820 ft.
Midwest Royalty Co. No. 1 Dayton, San Juan Decarriutas San Matias subd., Sh. No. 47. Drlg. sh. 1,830 ft.

Williamson County

Burns Oil Co. No. 1 Hanson, Wm. Byerly Sur. No. 24. T.D. 1,555 ft.; abd.
W. O. Caffey No. 1 J. Seggern, Hardy Pace Sur. S.D. 451 ft.

WEST TEXAS WILDCATS

Andrews County

J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. S.D. 4,480 ft.

Brewster County

H. D. Wilcox No. 2 Kokernot, Sec. 23, Blk. C, J. V. Massey Sur. Drlg. 750 ft.

Cochran County

T. G. Shaw, Tr., No. 1 Carrie S. Dean. Lge. 94. Swbg. 12 B.F.P.H.; S.I. 5,001 ft.

Crane County

P. A. Christian No. 1 M. F. Stephenson, Cert. 2044, W. H. Bates Sur. No. 40. Drlg. 485 ft.
Gulf Oil Corp. No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. Est. 51 B.O.P.D.; U.R. 3,645 ft.; T.D. 3,720 ft.
Standard Oil Co. of Texas No. 1 N. A. Adams, Sec. 12, Blk. 24-B, P.S.L. Sur. Drlg. 940 ft.

Crockett County

Hanson & Anderson No. 1 W. T. Knoelke, Sec. 30, Blk. GG, H.E.&W.T. Sur. Abd.
Humble No. 1 Ozona-Barnhart, Sec. 4, Blk. M-N, G.S.&F. Sur. Drlg. 8,020 ft.

Crosby County

Gulf Oil Corp. No. 1-C Swenson, Sec. 95, Blk. 2, H.&G.N. Sur. Drlg. 2,540 ft.

Culberson County

Quito Oil Co. No. 1 Cameron Lbr. Co., Sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dawson County

Daw-Tex Oil No. 1 J. E. Neely, Sec. 28, Blk. 35, T.&P. Sur. Cmtd. 7-in. 4,369 ft.; S.D. 4,849 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. Repg. rig. 3,662 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur. T.D. 7,074 ft.; drlg. plug 6,925 ft.; P.B. 6,925 ft.; bailing.

Ector County

Barnes-Conklin & White No. 1 T.&P. Lds., Sec. 28, Blk. 45, T.&P. Sur. Loc.
Landreth Prod. Corp. No. 1-A Frank Cowden, Sec. 10, Blk. 44, T.&P. Sur. Drlg. 2,965 ft.
Lee Drlg. Co. No. 1 J. L. Johnson, Sec. 5, Blk. 42, T.&P. Sur. Drlg. 730 ft.
M. B. K. Drlg. Co. No. 2 Gist, Sec. 9 Blk. 42, T.&P. Sur. Rng. 8¼-in. csg. 3,770 ft.
S. W. Richardson No. 1 T.&P. Lds.. Sec. 13, Blk. 45, T.&P. Sur. Loc.
Sloan & Zook No. 1 J. L. Johnson, Sec. 34, Blk. 43, T.&P. Sur. Drlg. 290 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel, R.U.S.T.; to P.B. and sdtrk.; T.D. 3,571 ft.; S. D.R. 3,571 ft.

Gaines County

Humble O. & R. Co. No. 1 W. T. Caswell, Sec. 10, Blk. 24-A, P.S.L. Sur. Bldg. rotary drk.; T.D. 310 ft.
Osage Drlg. Co. No. 1 E. H. Jones, Sec. 20, Blk. 7-A, P.S.L. Sur. Drlg. 4,865 ft.

Glasscock County

J. R. Petty No. 1 Joe Blake, Sec. 163, Blk. 29, W.&N.W. Sur. Drlg. 1,115 ft.
Shell Pet. Corp. No. 1 A. Neal, Sec. 38, Blk. 33, T.&P. Sur. Drlg. 2,788 ft.

Hockley County

Texas Co. No. 1-C Mallett, Lbr. 11, Lge. 51, Scurry C.S.L. Sur. Swbg. and flwg. 20 B.O.P.H.; T.D. 5,050 ft.

Howard County

Dick Graham No. 1 P. Johnson, Sec. 34, Blk. 32, T.&P. Sur. Loc.
Ooley & McQuain No. 1 O'Daniels, Sec. 39, Blk. 30, T.&P. Sur. S.D.O. 3,000 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twr. 6, S.G. 6,340-45 ft.; prep. swb. 6,400 ft.; S.G.
Haymon Krupp No. 1 Briggs, Sec. 24 Blk. 73, Twp. 7, T.&P. Sur. W.O.C. 5,365 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. Drlg. 1,685 ft.; S.G.

Martin County

T. G. Shaw, Tr., No. 1 Wilkerson, Sec. 35-A, B.&C. Sur. Drlg. 3,968 ft.

Pecos County

Geo. T. Abell No. 1 T. A. Knapp, Sec. 22, Blk. 9, H.&G.N. Sur. D.&A. 2,503 ft.
Leidecker & Cain No. 1 M. M. Lehn, Sec. 71, Blk. 10, H.&G.N. Sur. Drlg. 1,685 ft.; S.G.
Magnolia Pet. Co. No. 1 Eaton-Abell, Sec. 23, Blk. 3, H.&T.C. Sur. Fsg. tools 1,960 ft.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. Tstg. est. 35 B.O.P.D.; T.D. 2,290 ft.; swbg. est. 20 B.O.P.D.; 5 B.W.P.D.
Superior Oil Corp. No. 1 V. W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. Drlg. 170 ft.
Superior Oil Co. No. 1 V. W. Crockett, Sec. 7, Blk. 110, T.C.R.R. Sur. Loc.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. S.D.O. 2,744 ft.; no report.
S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Rig burned; dropped baller in hole; S.D.O. 7,342 ft.
J. C. Trees No. 1 fee, Sec. 63, Blk. 3, H.&G.N. Sur. Tstg. on pmp.; est. 5 B. O.P.D. and 5 B.W.P.D.; T.D. 2,359 ft.
C. W. Williams No. 1 J. Eaton, Sec. 1, Blk. 203, J. H. Handy Sur. Drlg. 1,620 ft.
C. W. Williams No. 1 T.&P. Ld., Sec. 95, Blk. 3, T.&P. Sur. Mach.

Presidio County

L. C. Brite No. 4 fee, Sec. 113, Blk. 12, G.H.&S.A. Sur. S.D.O. 5,602 ft.
Marfa Oil Co. No. 1 Fischer ranch, Sec. 31, Blk. 8, G.H.&S.A. Sur. M.I.M.
H. D. Wilcox No. 2 Jones-Coffield, Sec. 308, Blk. 4, H.&T.C. Sur. C.O. 1,840 ft.

Reeves County

Artie Baker No. 1 J. W. Grider, Sec. 31, Blk. 58, P.S.L. Sur. S.D.R. 450 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec. 30, Blk. L, G.H.&S.A. Sur. Drlg. 5,668 ft.
Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. Drlg. 5,130 ft.

Scurry County

Coffield & Guthrie No. 1 First Natl. Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. C.O. 2,450 ft.; T.D. 3,184 ft.; swbg. est. 25 B.O.P.D.
H. C. Wheeler No. 1 M. Sims, Sec. 141, Blk. 97, H.&T.C. Sur. W.P.C. 540 ft.

Stonewall County

Forest Dev. Co. No. 1 T. A. Ellison, Blk. D, Sec. 114, H.&T.C. Sur. S.D. 3,695 ft.
Shell Pet. Corp. No. 1 T. K. Smith, Sec. 143, Blk. 1, H.&T.C. Sur. Loc.

Terrell County

Shirley, Lanham & Blakeney No. 1, Sec. 45, Blk. 2-B, C.C.S.D.&R.G.N.G. Sur.; 2,500-ft. test. Loc.

Tom Green County

Lynn & Cobb No. 1 I. B. Cox, Val. Mueller Sur. No. 176. S.D. 368 ft.
Roush & Steward No. 1 Pugh, James Eldridge Sur. No. 73. S.D. 194 ft.; est. 10 ft. O.I.H.
Dan Short et al No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur. S.D.; csg. 550 ft.
Southern Cross No. 1 Upton & Upton, Sec. 20, Blk. A, A.B.&M. Sur. Fsg. tools 3,575 ft.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. S.D.O. 5,803 ft.; tools out of hole.

Ward County

McQueen & Clevenger No. 1 Geo. Sealy, Sec. 47, Blk. F, G.M.M.B.&A. Sur. Est. 5 B.O.P.D.; C.O. 3,042 ft. after shot; comp.; 310 B.O.P.D.; T.D. 3,042 ft.
Peerless O. & G. Co. No. 1 Texas Cotton Ind., Sec. 35, Blk. 1, H.&T.C. Sur. Heading oil at 1,866 ft.
Geo. Wallace No. 1 R. Avery, Sec. 36, Blk. 1, H.&T.C. Sur. Drlg. 1,803 ft.

Winkler County

Harding & Margan No. 1 Jenkins-Gulf, Sec. 13, Blk. 77, P.S.L. Sur. Drlg. sd. 3,390 ft.; S.O.; flwg. at rate 285 B.O. P.D.

Yoakum County

Shell Pet. No. 1 Waples-Platter, Sec. 616, Tstg. 5,380 ft.; hole fills at rate of 100 ft. per hr.; making 1 baller of wtr. per hr.; P.B. 5,312 ft.; bailing.

TEXAS PANHANDLE

Castro County

English et al No. 1 Gundlach, NW¼ Sec. 145, Blk. 6-M, S.K.&K. Sur. Loc.

Collingsworth County

Johnson No. 1 Taylor, Sec. 10-17, H.&G. N. Sur. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell, Sec. 18, Blk. 3, X. Sur. U.R. 5,626 ft.

Gray County

Products O. & G. Co. No. 1 Mason Davis, Sec. 23, Blk. 23-M, H.&G.N. Sur. Loc.

Lipscomb County

Darrouzett Oil Co. No. 1 Pugh, 1½ mi. S and 1 mi. W of Darrouzette. S.D.; wtr. 3,401 ft.

E. C. TEXAS WILDCATS

Angelina County

Ginter Bros. No. 5 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. S.D.R. 2,004 ft.
Ginter Bros. and Jones No. 6 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. M.I.R.
K. L. McHenry No. 1 J. S. Russell, A. Flores Sur., 4 mi. N of Lufkin. Tstg. 1,032 ft.; pmp. 30 B.F.P.D., 98% wtr.

Falls County

M. A. Hayes No. 1 D. G. Wooten, J. Powell Sur., 8 mi. SE of Zott. W.O.C. 40 ft.
Jack Shaunfield No. 1 Bargonier, J. M. Graham Sur., SE of Chilton. Drlg. 400 ft.

Grayson County

John Grey No. 1 Freedman, W. S. Reeves Sur., 8 mi. NW of Denison. O.S. 1,357-59 ft.; S.D. to test.
Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville. 4,000-ft. test. S.D.O. 3,929 ft.
Prince Bros. No. 1 Williams, S. Nix Sur., 2 mi. NE of Van Alystine. Drk.
Ross & Marshall No. 1 J. N. Taylor, W. Moore Sur., 8½ mi. NW of Denison.
Sinclair Prairie Oil Co. No. 1 M. Williams, R. H. Sowell Sur., 1 mi. SW of Collinsville. Drlg. 100 ft.

Henderson County

Dulup Oil Co. No. 1 S. B. Cornelius, E. Washborn Sur., 3½ mi. NW of Stackard. Rng. elec. survey; T.D. 4,240 ft.
Tide Water-Seaboard-Humble No. 1 Lewis, J. K. Stokes Sur., 1 mi. N of Opelika area. Drlg. 1,330 ft.
Tide Water-Seaboard-Humble No. 1 Scott, C. Robb Sur., 3 mi. SW of Opelika area. W.O.C. 193 ft.

Hill County

A. V. Abernathy and L. N. Sanders No. 1 E. M. Farrell, M. Mata Sur., ¼ mi. NE of Mt. Calm. S.D. 550 ft.
Sykes-Brennals No. 1 Weatherly, W. O. Nerriweather Sur., 4 mi. SE of Hillsboro. Drlg. 2,297 ft.

Houston County

Cities Service Oil No. 1 C. C. Hill, J. D. Procella Sur., 2 mi. W of Grapeland. Perf. csg. to test; T.D. 6,009 ft.
G. C. Dixon No. 1 W. Goodman, J. J. Thomas Sur., ¾ mi. E of Lovelady. R.U.
W. W. Henschliffe No. 1 J. Gilmore, Nathan Wade Sur., 1 mi. N of Navarro Crossing pool. Drlg. 4,000 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. S.D. 2,200 ft.
W. G. McGee No. 1 General American Life Ins. Co., John Baker Sur., 6 mi. W of Mabank. T.S. 3,070 ft.; S.O.; S.D. 3,093 ft.
Valentine & DeArman No. 1 C. E. Bowman, D. Falcon Sur., 1½ mi. S of Kaufman. M.I.R.

Leon County

Humble O. & R. Co. No. 1 W. O. Harris, T. O. Harris Sur., 4 mi. NW of Navarro Crossing; offset to No. 1 Ed Swift. Tstg. dist. 5,917 ft.
Humble O. & R. Co. No. 1 C. R. Polen, H. W. Sublett Sur., 4 mi. NW of Navarro Crossing pool. Drk.
J. K. Hughes No. 1 H. Pearistone, J. F. Files Sur., 4 mi. S of Keechi. Drlg. 1,100 ft.

Limestone County

H. Gant No. 1 Vol De Long, P. Varela Sur., 1½ mi. NW of Thelma. D.&A. 2,975 ft.

Nacogdoches County

D. McDaniels No. 1 T. H. Seale, J. A. Cherino Sur., just outside of city limits of Cherino. Drlg. 405 ft.

Navarro County

Guy Sitton No. 1 J. P. Fortson, T. J. Chambers Sur., 4 mi. E of Alma. S.D. 628 ft.
W. H. Strong No. 1 Emma Jackson, J. McNeal Sur., 10 mi. S of Corsicana. S.D. 780 ft.
W. H. Strong No. 1 Estes Bros., Wm. Bartelles Sur., 1½ mi. SW of Roane. Drlg. 550 ft.
Topaz Oil Co. No. 1 E. Trammel, R. Mathews Sur., 4 mi. NE of Bazzett. Loc.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 720 ft.

Red River County

Hampton, Osteen & Wooley No. 1 J. M. Roberts, J. Ware Sur., 12 mi. N of Clarksville. Loc.

Robertson County

J. E. Cox No. 1 Sandifer, H. Henry Sur., 3½ mi. SE of Franklin. Loc.

Smith County

Dr. T. T. Grant No. 1 T. W. Thweatt, J. Burch Sur., 2 mi. NE of Garden Valley. M.I.R.
J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ¼ mi. SE of Jamestown. Swbd. dry 2,083 ft.

Trinity County

W. C. Shirley No. 1 So. Pine Lbr. Co., J. A. Sepulveda Sur., 5 mi. NW of Apple Springs. Drlg. 692 ft.

Van Zandt County

F. A. Richardson No. 1-A B. C. Dodd, T. W. Hutchinson Sur., 2 mi. S of Grand Saline. Drlg. 4,185 ft.

NORTH TEXAS WILDCATS

Archer County

British American O. P. Co. No. 1 T. B. Wilson, Sec. 12, H.&T.C. Sur. Sat. L. 4,666-4,759 ft.; to test.
G. E. Kadane & Sons No. 1 J. Hemmi, Sec. 60, Clark & Plumb Sur., Blk. 3. Drlg. 4,013 ft.
Phillips Pet Co. No. 1 J. B. Miller, Sec. 20, A.T.N.C.L. Sur. T.D. 4,006 ft.; C.O. to 3,400 ft.
L. Sikes No. 1 Miller, Wm. Shaw Sur. A-378. 6⅝-in. cmtd. 5,218 ft.; drld. plug; tstd. S.W.; S.D.O.

Baylor County

British Am. O. P. Co. No. 1 J. E. Cope, Sec. 220, T.&N.O. Sur. T.D. 5,598 ft.; S.D.O.; to test shallow pay.
British Am. O. P. Co. No. 1 F. C. Green "L," Sec. 8, H.T.&B. Sur. S.D.O. 4,304 ft.; to test shallow pay.

Clay County

Bridwell Oil Co. No. 1 Furd Halsell, Blk. 16, W.C.R.R. Sur. O.S. 4,755-93 ft.; to test; 6⅝-in. 4,758 ft.; C.O. and tstg.; flwg. by heads while swbg.; flwd. 150 bbls. in 3 hrs.; W.O.T.
H. S. Moss No. 1 T. J. Parmley, Sec. 6s. M.G.S.L. Sur. A-308. S.D. 4,055 ft.

Hardeman County

N. Gilbert No. 1 R. Weakley, Sec. 85, H. &T.C. Sur., 4,000-ft. test. Loc.

Cooke County

Continental Oil Co. No. 1 W. M. Gwyn, F. J. Lindheimer A-576. Drlg. 433 ft.
Howard & Means No. 1 W. T. Lynch, A. Edmiston Sur. A-353. Matl. for 5,000-ft. test. Drlg. 4,789 ft.
Needham & Richards No. 1 Peary, T. Toby Sur. A-1047. Fsg. baller 2,190 ft.
Geo. Ross & Co. No. 1 B. Inglish, G. W. McGowan A-695 Sur. 6⅝-in. csg. 1,609 ft.; S.S.O. 1,678-33 ft.; S.S.O. 1,740-41 ft.; drlg. 1,858 ft.

Jack County

N. B. Crenshaw et al No. 1 J. W. Kinder, J. G. Coe A-145. Drlg. 1,710 ft.

Montague County

Benton & Holmes No. 1 J. Bowers, Sec. 55, M.E.P.&P. Sur. S.S.O. 2,887-95 ft.; 6⅝-in. 2,883 ft.; tstg. est. 500 to 600 B.P.D.; D.D. to 2,950 ft.; tstg.
Bridwell Oil Co. No. 1 H. A. Reynolds, Sec. 9, E.T.R.R. Sur. R.U.R.
Cordova-Union Oil-Gillespie No. 1 Cable, Stephenson Sur., Abst. 462. Loc.
Staley Oil Co. No. 1 Nunnely, M. S. Ussery Sur. A-824. Drlg. 5,580 ft.

Wichita County

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Spd. and S.D.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D.
H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Pits.

Wilbarger County

Lawson & Leavell No. 16 W. T. Waggoner A. Sec. 109, H.&T.C. Sur., Blk. 14; 3,500-ft. test. Fsg. 1,332 ft.

Young County

Brazos Young Corp. No. 1 Texas Co., J. S. Lee A-173. Drlg. 4,295 ft.
H. M. Leidecker No. 1 J. M. Nall, Sec. 1997, T.E.&L. Sur. Drlg. 3,140 ft.
Long & Lupton No. 1 A. Crouch, I.&G. N. Sur. A-1460. 6⅝-in. 3,865 ft.; sat. L. 3,940 ft.; treating with acid; test wtr.; S.D.O.

WEST CENTRAL TEXAS DISTRICT

Brown County

T. W. Allmon No. 1 Almeda Moore, Jesse Williams Sur. No. 144, Abst. 931. S.D.R. 610 ft.
A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. S.D. 520 ft.

Callahan County

J. W. Dobbs Oil Corp. No. 2 Finley, Sec. 75, Bayland Orphans Home Lds. Skd. rig 50 ft.; S.D. for line 721 ft.
Joe Fainer No. 1 M. Guyton, John Barton Sur. No. 8, Abst. 11, S.D.O. 1,560 ft.
J. C. Jackson and Doug. Tomlingson, Jr., No. 1 T. J. Thompson, Sec. 30, B.B.B. &C. Sur. S.D. 1,900 ft.

Coleman County

Dale Smith No. 1 T. M. Hayes, Mund Gross Sur. No. 44. S.D.O. 260 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. S.D.O. 2,910 ft.
E. T. DeArman No. 1 Moorman, Sec. 37, D.&D.A. Sur. S.D.O. 2,860 ft.

Concho County

Clymore Co., Inc., No. 1 Hill, J. Frederick Sur. C.O. 2,302 ft.
National Resources No. 1 Armon, Sec. 105, Blk. 72, T.&N.O. Sur. S.D.R. 700 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Tstg. 2,600 ft.; Ranger L.
G. M. Grace No. 1 J. W. Caudle, W. Mitchell Sur., Abst. 382. S.D.O. 900 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. S.D. 3,370 ft.; S.O. rng. csg. and will treat; T.D. 3,377 ft.

Haskell County

Amerada Pet. Corp. No. 1 Kleiner, J. M. Cass Sur. Drlg. 3,922 ft.

Nolan County

Green & Owens No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. Fsg. csg. 4,464 ft.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.& P. Sur., Abst. 1958. S.D. 2,200 ft.

Shackelford County

J. P. Alexander No. 1 Alexander, Sec. 569, T.E.&L. Sur. D.&A. 786 ft.
Fox & Rudd No. 1 Shotwell, Sec. 59, B.A.L. Sur. Fsg. 1,632 ft.
Oconee Oil Co. No. 1 Eli Jennings, Sec. 62, Blk. 14, T.&P. Sur. D.&A. 2,003 ft.
C. W. Waddington No. 1 Cottle, Sec. 42, Univ. Sur. Spdg.

EAST TEXAS

(Border Counties)

Harrison County

Ark. La. Gas Co. No. 1 Jim Davis, Jas. Adams Sur. D.S.T. 5,644-66 ft.; ¼-in. cks. top and ½-in. bttm.; 21 min.; rec. 1 jnt. mud; no shows; cd. to 6,180 ft., sd.; D.S. tstg. 6,162-80 ft., sd. with odor and pin points of oil.
J. A. Hughes No. 1 Taylor, H. McNutt Sur. Cg. 1,015 ft.
Wm. S. King No. 1 Taylor, H. Martin Sur. S.D. 3,744 ft.; W.O.

Marion County—Rodessa

Texas Co. No. 4 Chatten, 467 ft. WL, 2,050 ft. NL lse., Wm. R. Meyers Sur. R.U.

Marion County—Other

Tom Bell No. 1 Moseley, D. Lane Sur. T.D. 2,622 ft.; S.D.
M. D. Fitzwater No. 1 Mrs. Mary S. Duncan, J. Fitzgerald Sur. Set 15½-in. csg. 105 ft.; T.D. 105 ft.
M. D. Fitzwater No. 1 Terry, W. Coor Sur. T.D. 1,160 ft.; Ntch. sd. S.O.; swbg.

Panola County

Paul Pewitt No. 1 Rushing Est., Mannon Smith Sur. Drlg. sh.&L. 4,367 ft.
Turner & Smith No. 1 J. W. Bird, G. Gillespie Sur. Drlg. 3,547 ft.

Shelby County

Earl McDaniel No. 1 C. W. McDaniel, Wm. Snider Sur. T.D. 5,560 ft.; hole cleaned; rng. 7-in. csg.

La.-Ark. Fields

(Continued from Page 119)

the James Adams Survey, Waskom gas field, in eastern Harrison County, Texas, is testing another section this week-end after coring sand at 6,162-80 feet showing an odor and pin points of oil in the Travis Peak. The deep test last week showed recovery of one joint of mud and no oil shows after drill-stem testing a section at 5,644-66 feet.

NORTH LOUISIANA COMPLETIONS

(24-hour gauges)

Vivian—Caddo Parish

J. P. Adams and others No. 1 Stallcup, N half NW NW NW Section 34-22-16, pumping 60 bbls. per day, total depth 2,468 feet, 5½-inch casing at 2,460 feet. J. P. Adams and others No. 2 Stallcup, SW cor. NW NW Section 34-22-16, pumping 110 bbls. per day, 5½-inch casing 2,469 feet, total depth 2,476 feet. Mose Browning and others No. 1 Browning, 330 feet SE cor. Section 21-22-16, completed flowing 480 bbls. through one-half inch choke, casing pressure 105 feet, no tubing gauge, 5½-inch casing at 2,628 feet, total depth 2,635 feet. Burnham Drilling Co. No. 2 Bell, 1,650 feet south, 993 feet east of NW cor. Section 34-22-16, set 7-inch casing at 2,483 feet, total depth 2,493 feet, plugged back to 2,450 feet, salt water and abandoned. Tippett Oil Corp. No. 2 Browning, 990 feet from SE cor. Section 22-22-16, dry and abandoned 2,695 feet.

Caddo Field—Caddo Parish

C. C. Lowery No. 1 Collins, 625 feet north, 728 feet east of C Section 7-20-15, 75 bbls. through open tubing, total depth 1,580 feet, set 7-inch casing at 1,356 feet, acidized with 3,000 gallons.

Shreveport—Caddo Parish

Hurricane Petroleum Corp. No. 2 Harmon, C SE SW Section 34-18-14, Porous lime 5,556-71 feet, set 5½-inch casing 5,565 feet, 33 bbls. through one-half inch choke, casing pressure 750 pounds, tubing pressure 300 pounds.

De Soto Parish

T. D. Humphries No. 1 Jenkins Estate, C NE SW Section 12-12-14, a wildcat, top of Nacatoch sand 1,280 feet, total depth 3,510 feet, dry and abandoned.

ARKANSAS

Magnolia—Columbia County

Atlantic Refining Co. No. 1-C Garrett, C SW SE Section 13-17-20, set 5½-inch casing 7,623 feet, perforated at 7,514-57 feet and 7,575-7,602 feet, flowed 624 bbls. through one-quarter inch choke, tubing pressure 1,300 pounds, casing pressure 1,500 pounds, total depth 7,624 feet. Southwood Oil Co. No. 2 Grelling, C SW NE Section 23-17-20, set 7-inch casing 7,485 feet, drilled to total depth of 7,513 feet, flowed 180 bbls. through three-sixteenths inch choke, tubing pressure 1,350 pounds, casing pressure 1,500 pounds.

EAST BORDER TEXAS

Wildcat—Harrison County

R. S. Barnwell No. 1 L. Smith, A. P. Hope Survey, set 7-inch casing at 2,431 feet, perforated at 2,320-28 feet and 2,027-50 feet, dry, salt water, and abandoned.

Rodessa—Marion County

Arkansas Louisiana Gas Co. No. 1 Hurst, 467 feet north, 250 feet west SE cor. 13.15-acre tract, A. D. S. Coy Survey, set 5½-inch casing 6,090 feet, flowed 628 bbls. through one-quarter inch choke, tubing pressure 575 pounds, casing pressure 475 pounds, gas-oil ratio 460 to 1, total depth 6,110 feet.

Gulf Coast Fields

(Continued from Page 110)

Buffam, sand 7,623-44 feet, 495 bbls., quarter-inch choke. Texas Co. No. 2 Humphrey, perforated casing 7,617-24 feet, 476 bbls., quarter-inch choke.

Jefferson County

Amelia field: Stanolind Oil & Gas Co. No. 7 Keith Dowlen, perforated casing 5,355-73 feet, 79 bbls., 9/64-inch choke. Lovells Lake field: Humble Oil & Refining Co. No. 2 Failor, 7,716 feet, 126 bbls., eighth-inch choke.

Wharton County

Markham field: Power Production Co. No. 1 Sisk, 4,149 feet, abandoned.

Matagorda County

Withers field: Smith & McDannald No. 1 Worthington-Hancock, sand 5,535-47 feet, 116 bbls., eighth-inch choke.

Personal Paragraphs

MORE THAN 100 oil men from foreign lands are in the United States at this time. Most of them were at the recent oil show in Houston, Tex., and many attended the conventions of the Natural Gasoline Association of America and the Natural Gas Section, American Gas Association, in Tulsa. Their individual tours will include various oil fields. Following is a list of the visitors:

Arabia

H. B. WILLIAMS, drilling department, California Arabian Standard Oil Co., Casoc, Saudi.

Bahrein Island

C. E. DAVIS, Bahrein Petroleum Co.

W. A. STEWMAN, drilling department of the Cal.-Tex. Corp.

Canada

KENNETH H. CLARKE, JR., International Nickel Co., 25 King Street, West Toronto.

H. E. DENTON, production superintendent, Anglo-Canadian Oil Co., Ltd., Calgary, Alberta.

M. M. HESS, president, Hughton Cooperative Oil Co., Ltd., Hughton, Sackatchewan.

E. S. HOLMES, Anglo-Canadian Oil Co., Lancaster Building, Calgary, Alberta.

M. R. KING, Reed Roller Bit Co., Lancaster Building, Calgary, Alberta.

C. M. LONG, managing director, Blood Indian Oils, Ltd., Bank of Montreal Building, Moosejaw, Saskatchewan.

WALTER C. MUELLER, Mueller Machine Works, Calgary, Alberta.

W. L. PEAKER, comptroller, Anglo-Canadian Oil Co., Ltd., 900 Lancaster Building, Calgary, Alberta.

J. G. SPRATT, chief geologist, Anglo-Canadian Oil Co., Lancaster Building, Calgary, Alberta.

RALPH WILL, general superintendent, Anglo-Canadian Oil Co., Lancaster Building, Calgary, Alberta.

Cuba

L. PEREZ, Cuban Commission Co., P. O. Box 1691, Havana.

England

J. S. GAYNOR, Shell Oil Co., London.

F. H. GRAY, London manager, Reed Roller Bit Co., London.

GILES P. E. HOWARD, Hayward-Tyler & Co., Ltd., London.

ALEXANDER IVANOFF, Ph.D., Hayward-Tyler & Co., Ltd., London.

Germany

H. FLEBBE, engineer, Itag, Celle, Hannover.

JOACHIM PFENG, drilling engineer, Itag, Celle, Hannover.

HARRY von RAUTENKRANZ, general manager, Itag, Celle, Hannover.

India

R. A. BRUCE, Assam Oil Co., Ltd., Assam.

Mexico

ESCUDERO ALEJANDRO, JR., petroleum engineer, A.G.P.N., Poza Rica, Vera Cruz.

GUTICRREZ ALFONSO, engineer, A.G.P.N., Colon No. 41, Mexico City.

ALFONSO BARNETCHE, petroleum engineer, Petroleos Mexicanos, Juarez 92, Mexico City.

T. R. BIBEE, drilling superintendent, Mexican Gulf Oil Co., Tampico.

JUAN de la GARZA CARDENAS, Petroleos Mexicanos, Avenue Juarez, Mexico City.

JOAQUIN CASTILLEJOS, Petroleos Mexicanos, Juarez Avenue, Mexico City.

A. E. CREVAS, Anglo-Mexican Oil Co., Mexico City.

GILBERT M. DAVIES, manager, Cia Consolidada "Oilwell," S. A., Apartado 331, Tampico.

ANGEL DOMINGUES, engineer, Petroleos Mexicanos, Avenue Juarez, Mexico City.

DONATO ESTROP, engineer, Petroleos Mexicanos, Avenue Juarez, Mexico City.

S. A. GROGAN, Mexican Gulf Oil Co., Tampico.

J. H. HOUZE, General Machine & Supply Co., Tampico.

E. MOREND, Mexican Gulf Oil Co., Tampico.

RAUL RODRIGUEZ, Petroleos Mexicanos, Avenue Juarez, Mexico City.

ADOLFO ROLDAN, administrator, Petroleros y Perforados Mexicanos, Reforma 445, Mexico City.

LUIS PEREZ ROSSI, Petroleos Mexicanos, Tampico.

OTTO B. STILES, vice president and general manager, Mexican Machinery Co., S. A., Rivera 412, Oriente, Tampico.

FRANCISCO INGUANZO SUARCE, Petroleos Mexicanos, Avenue Juarez, Mexico City.

I. B. SUTTON, General Machine & Supply Co., Tampico.

B. TARVER, Aguila Oil Co., Tampico.

J. C. WILLIAMSON, drilling foreman, Mexican Gulf Oil Co., Apartado 106, Tampico.

The Netherlands

J. J. ARPS, equipment engineer, Royal Dutch-Shell, The Hague.

WILLY KEUNEN, P. O. Box 87, Hertogenbosch.

J. A. SMITS, equipment engineer, Royal Dutch-Shell, The Hague.

Poland

SAMUEL ADLER, mining engineer, Krosno.

FRITZ C. DRESSLER, technical adviser, Kopalnia nafty Krakow-Sosnkowski 66, Pilsudskiego, Borysław 3.

JAKOB SCHMER, president, Jakob Schmer Co., Lipinki-Kryg, Kryg ad Gorlice.

Rumania

P. A. BOUVIER, refinery manager, "Colombia," Refinery "Aguila," Ploesti.

M. CONSTANTINESCU, general manager, Creditul Minier, Bulevardul Bratianu 16, Bucarest.

VICTOR DUMITRESCU, production superintendent and assistant technical manager, Steaua Romana, Campina.

ING. ERNEST HAIER, Romano-Americana, Ploesti.

DR. ING. H. HUGEL, mining engineer, Astra Romana, Campina.

C. IORDACHESCU, engineer, Societe Concordia, Liliesti Off. Baicoi Jud, Prahove.

KARL KAHN, engineer, "Unirea" Societate Anonima Romana de Petrol, Strada General Berthelot No. 90, Bucarest.

E. E. LEONHARDT, mining engineer, Astra Romana, Campina.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Al. E. Watts has been made inspector in the Cushing field in Oklahoma representing the Oklahoma Corporation Commission. His duties are to see that the pipe lines give all producers a fair deal.

John M. Keith, 81, originally a sheep man, who made millions out of the Kern River oil field, dies in San Francisco. He had no immediate relatives, and it is believed he willed most of his fortune to charities.

20 YEARS AGO

The Eccles interests, affiliated with the Amalgamated Sugar Co., paid $1,750,000 for 160 acres in Section 2-30-79, in the Salt Creek, Wyoming field.

The famous Barney Thlocco case has been settled and $1,000,000 of Cushing field royalty money tied up in banks will be distributed to a particular set of heirs.

A Sapulpa law firm that claimed a $2,500,000 fee for services rendered in an Indian heir case was cut to $750 by Judge Youmans of the U. S. Court. The case concerned a Cushing oil lease.

10 YEARS AGO

Oklahoma Corporation Commission fixes the allowable production of oil in Oklahoma at 725,000 bbls. per day, increasing it from 650,000 bbls. because of increased demand. Current production is 671,000 bbls. a day.

William B. Way, of Pittsburgh, Pa., is engaged as manager of the International Petroleum Exposition at Tulsa.

Shares in 20 representative oil companies listed on the New York Stock Exchange and New York Curb have risen to an average of $59.75 per share.

TRAJAN NITESCU, field superintendent, "Concordia" Co., Gura Ocnitei (Dambovita).

R. A. STEFANESCU, superintendent, Romano-Americana, Ploesti.

THOMAS O'BRIEN, "Carpatia," Ploesti.

A. PAMUŁA, field superintendent, "Colombia," Moreni.

GUSTAV PECICI, Astra Romana, S. A., Campina.

MIHAIL PIZANTY, publisher, Moniteur Du Petrole Roumain, Bulevardul Bratianu 26, Bucarest.

ANDREI POPOVICI, production superintendent, Creditul Minier, Bulevardul Bratianu 16, Bucarest.

Trinidad

R. G. BENNETT, driller, Trinidad Leaseholds, Ltd.

W. J. C. COOKE, representative, Trinidad Central Oilfields, Ltd., P. O. Box 6, San Fernando.

A. R. CRAWFORD, assistant drilling superintendent, Trinidad Leaseholds, Ltd.

GEORGE A. FOSTER, Kern Trinidad Oilfields, Ltd., Box 55, San Fernando.

A. J. RUTHVEN MURRAY, Kern Trinidad Oilfields, Ltd.

HARRY W. SMITH, drilling superintendent, Trinidad Leaseholds, Ltd., Rio Claro.

Venezuela

JOHN S. BAILY, production superintendent, Standard Oil Co. of Venezuela, Caripito.

L. J. BECKMANN, geologist, Lago Petroleum Co., Maracaibo.

J. R. CADE, drilling foreman, Standard Oil Co. of Venezuela, Caripito.

J. G. COULTRUP, petroleum engineer, Lago Petroleum Corp., Maracaibo.

B. R. CUNNINGHAM, drilling foreman, Caribbean Petroleum Co., Maracaibo.

K. T. DANIEL, Caribbean Petroleum Co., Maracaibo.

V. W. FLETCHER, Caribbean Petroleum Co., Maracaibo.

J. C. GORDON, engineer, Standard Oil Co. of Venezuela, Caripito.

W. E. GRAY, district superintendent, Standard Oil Co. of Venezuela, Caripito.

H. B. HEGGLUND, Standard Oil Co. of Venezuela, Caripito.

L. H. J. HERSCH, superintendent, Caribbean Petroleum Co., Maracaibo.

J. R. JACKSON, geologist, Standard Oil Co. of Venezuela, Caripito.

W. H. LYNE, JR., Pantepec Oil Co. of Venezuela.

T. A. MANARD, Standard Oil Co. of Venezuela, Caripito.

C. HOMER McDUFF, drilling superintendent, Standard Oil Co. of Venezuela, Caripito.

R. B. OWENS, Standard Oil Co. of Venezuela, Caripito.

J. H. REGAN, Standard Oil Co. of Venezuela, Caripito.

W. D. SORRELLS, petroleum engineer, Lago Petroleum Corp., Maracaibo.

F. W. STARKE, Caribbean Petroleum Co.

P. C. THOMAS, Caribbean Petroleum Co.

SIRO VAZQUEZ, petroleum engineer, Standard Oil Co. of Venezuela, Caripito.

A. N. WALP, drilling foreman, Caribbean Petroleum Co., Maracaibo.

H. A. WALLIS, petroleum engineer, Lago Petroleum Corp., Apartado 172, Maracaibo.

REX WATSON, chief petroleum engineer, Lago Petroleum Corp., Maracaibo.

J. W. WATTS, material supervisor, Standard Oil Co. of Venezuela, Caripito.

H. W. WELCH, Scharwenka & Welch, Caripito.

ROY A. WESSON, toolpusher, Standard Oil Co. of Venezuela, Caripito.

ALAN COLVILLE, of Shell Oil Co., with offices in Singapore, Straits Settlements, was in Los Angeles last week en route to England on leave of absence.

JEROME K. CROSSMAN, of Dallas, Tex., has been elected president of Ryan Consolidated Petroleum Corp. to succeed WATSON B. JOYES, who resigned.

G. S. CONNORS, superintendent for Williams Brothers Corp., Tulsa, attended the Kentucky Derby after returning from a trip to South America where his company is laying a 100-mile pipe line for Mene Grande Oil Co. in Venezuela.

W. L. STEWART, JR., vice president of Union Oil Co., plans to enter the transoceanic yacht race from San Francisco to Honolulu July 4. He won second place in the 1936 contest. His new 63-foot racing-cruising yawl, Chubasco, was launched recently at Wilmington, Calif.

HENRY M. BLACKMER, once head of the Midwest Oil Co., but a resident of France since 1924, has just made public the fact that last February 1 he married Eide Norena, a Norwegian prima donna. The ceremony was performed by the mayor of the Fifteenth arrondissement. Mr. and Mrs. Blackmer now are living in a new home in Avenue Foch, Paris.

W. H. BERG was reelected president of Standard Oil Co. of California last week. Others returned to their former posts were H. D. COLLIER, R. W. HANNA, R. K. DAVIES, and M. E. LOMBARDI, vice presidents; J. H. TUTTLE, secretary; V. F. PALMER, treasurer; G. J. O'BRIEN, assistant treasurer; B. W. LETCHER, and G. M. FOSTER, assistant secretaries.

KENNETH B. NOWELS has resigned as chief engineer and geologist for Forest Development Co. to enter petroleum engineering consultant practice with offices in Abilene, Tex. Mr. Nowels has been in the west several years, but before that he carried on extensive water-flood development in the Bradford fields for Forest Oil Corp. Also he was in charge of the experiment station at Laramie, Wyo., for the U. S. Bureau of Mines.

CLAY TALLMAN, general attorney since 1930 for the Stanolind companies (subsidiaries of Standard Oil Co. of Indiana), retired from service May 7 under the provisions of the retirement plan which became operative January 1, 1939. He will be succeeded by DONALD CAMPBELL, assistant general attorney for the past five years. Mr. Tallman, who was 65 last Sunday, started his law career in a Nevada mining camp. He served eight years as commissioner of the land office in the Department of the Interior during the Wilson administration.

ROY H. LAIRD, Kilgore mayor and wealthy royalty owner, was elected president of the East Texas Oil Association last week at its organization meeting. Fifty directors of the association met at Kilgore, Tex., to draw up a charter, adopt by-laws, name officers and outline a program for the coming year. H. P. NICHOLS, Tyler oil operator, was chosen temporary executive vice president, with JERRY SITTON, Kilgore, as temporary secretary-treasurer. Vice presidents are R. W. FAIR, Tyler; M. H. BIVINS, Longview; JOHN R. ALFORD, Henderson; M. W. McEVEY, Kilgore, and MURRAY SELLS, Gladewater. The association will have its headquarters at Kilgore.

HARRY EMERICH, geologist in the Shreveport, La., office of Magnolia Petroleum Co. for the last nine months, has been transferred to the Wichita Falls, Tex., office.

ALFRED MEYER, of London, British oil operator, with extensive interests in Venezuela, passed through New York last week en route to Venezuela.

C. C. BROWN, district superintendent for Pure Oil Co. in Corpus Christi, Tex., has been made division superintendent in Houston, succeeding FRED W. DALLAS, who resigned.

C. A. NEUSBAUM, assistant director of the Standard inspection laboratory of Standard Oil Development Co., departed from New York last week aboard the Santa Rosa for Curacao.

JAMES HAILEY, president of the Mid-Continent Royalty Owners Association, Tulsa, again is chairman of the Royalty Owners Committee of the Independent Petroleum Association of America.

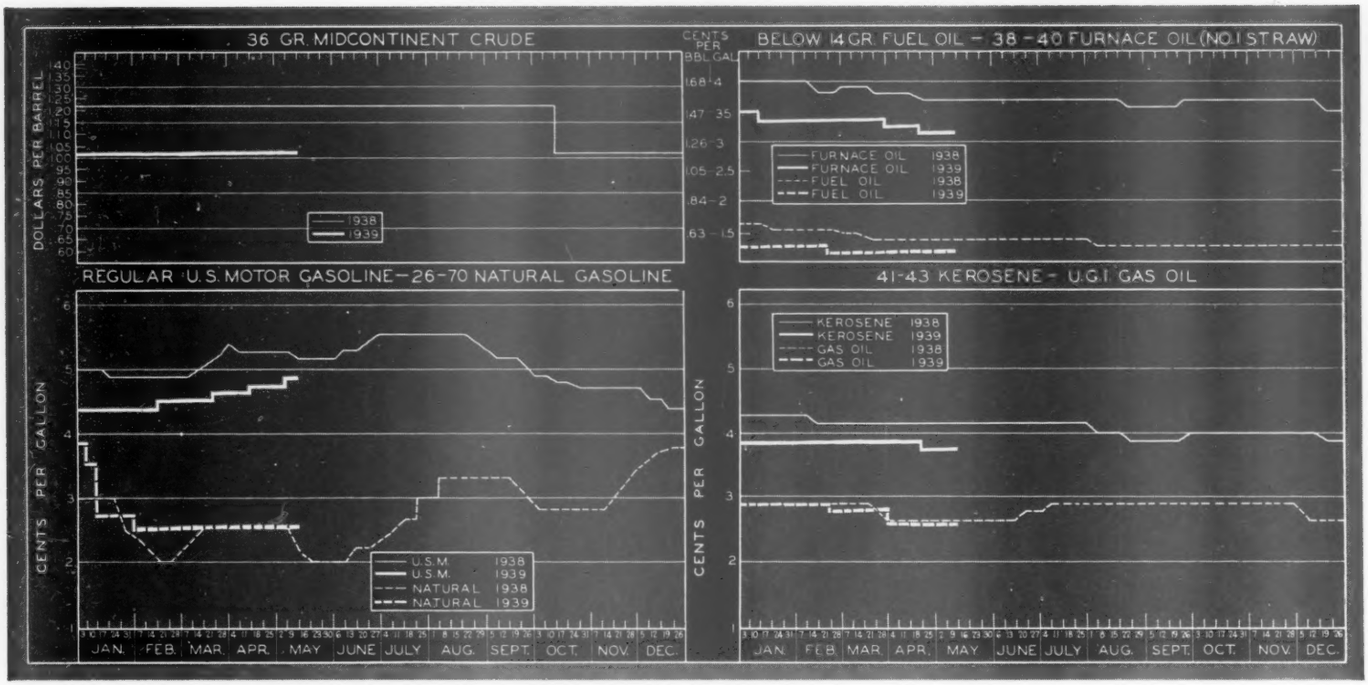
E. N. BELCHER, former president of Orange State Oil Co., Miami, Fla., has been named a director of the company, which recently was purchased by the Arkansas Fuel Oil Co. of Shreveport, La. P. G. PEMBERTON, formerly assistant treasurer, is now treasurer. R. W. VAN BRUNT, former assistant secretary, has been promoted to secretary. J. E. FENN continues as vice president and general manager.

W. R. BOYD, JR., New York, executive vice president of the American Petroleum Institute, spoke before the recent annual convention of the East Texas Chamber of Commerce in Beaumont on "The Right to Risk." "No economy of regimentation ever could have brought about the progress which the petroleum industry has made by private enterprise and by individual and corporate risk," Mr. Boyd said.

H. E. ZOLLER, Wichita, division manager in charge of Kansas operations for Shell Oil Co., Inc., has been named executive vice president and general manager of Derby Oil Co., and is to assume his new post June 1. A. L. DERBY, now head of the organization, will relinquish active management, but will retain all his interests and will continue as chairman of the board and chairman of the executive committee.

F. A. C. GUEPIN, since 1937 executive vice president of Shell Oil Co., Inc., has been made senior vice president and his headquarters are now in St. Louis instead of San Francisco. Mr. Guepin joined the Shell group in 1928. R. C. ROBERTS, who was manager of Shell's East Chicago refinery, has been made manager of the Wood River plant, succeeding E. D. CUMMING, who was advanced to vice president in charge of manufacturing. E. C. CUTTING, who was superintendent at East Chicago, is now manager.

F. C. LAURIE, formerly vice president and general manager of Lago Petroleum Corp. in Venezuela, has been promoted to the parent company executive staff in New York. J. A. CLARK succeeds him as vice president and general manager at Maracaibo. H. M. HOBERG has been promoted to the Standard Oil Co. of Venezuela executive staff at Caracas and becomes assistant to the president. A. T. PROUDFIT succeeds G. M. KNEBEL as manager of Standard of Venezuela at Caripito. Mr. Knebel has been promoted to the executive staff at Caracas.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline Up in Group 3; Shaky Retail Markets Prevent More Rapid Rise

By T. F. SMILEY

An eighth-cent advance in Group 3 tankcar gasoline prices raised market sentiment in that area another notch in the past week. There is general agreement that the dragging effect of disordered tank-wagon and retail markets is all that keeps gasoline from a swift rise to profitable levels. Demand is urgent. There are no burdensome inventories. Consumption is growing daily.

Cooperative efforts have removed a few of the particularly troublesome spots from the marketing scene in recent months, but in its major aspects the problem created by the price-cutter remains for a worried industry to solve.

Refiners in Hopeful Mood

Notwithstanding the depressing influence of subnormal prices in the distributing division of the gasoline trade, Oklahoma refiners were in a cheerful mood this week. They were hopeful that heavy withdrawals from stocks in the vacation months ahead would act as a corrective and put retail and tankcar markets on a sound footing.

Evidence was at hand that light distillates had reached their lows and that heavy residual fuels would continue to acquire strength. Natural gasoline was holding well. Wax was getting tighter.

Demand for gasoline seemed to be outrunning supply. One large independent refiner reported that his sales last week were almost exactly double the production of his own plants. He and other refiners were buying. A marked turn for the better in weather conditions helped greatly to stimulate sales, not only because the car owner was getting out on the highway more, but because the farmer, long prevented from working in the field, was able to start on delayed spring work.

Attention of the natural gasoline trade centered largely in the past week on the national convention of the Natural Gasoline Association of America, and the market was left pretty much to take care of itself. And it took care of itself very well. Prices were steady at unchanged levels, and the feeling was general that the lows for the present year had been touched. The large companies were putting material in storage against next fall's commitments. The fact that natural thus run into tanks is stabilized to 18 pounds vapor pressure, or lower, is preventing any surplus of the 26-pound from accumulating.

The decline of the heating oils seemed to have run its course. The past week brought some early inquiries for fall storing. Appearance of these inquiries commonly marks the end of the falling prices. Helping to create a healthier situation in the matter of stocks is the fact that refiners now are switching from light distillates to tractor and Diesel fuels.

Notwithstanding slightly rising demand for kerosene and tractor fuels, prices of both were exhibiting a softening tendency owing to brisk competition.

Making Too Much Lube Oil

Although the position of the lubricating oils was far from satisfactory, a little comfort was extracted from the increasing strength of the Pennsylvania product, since eventually any protracted tightness of the eastern market will be reflected in the Mid-Continent. Sharp curtailment of production is imperative, according to informed opinion. Industrial demand for lubricants has fallen off in recent months, making motor vehicles the principal source of business. Mid-Continent inventories now are far too large, and current output is in excess of requirements.

Wax moved into higher ground. Offers of anything less than 3 cents for 124-126 white crude scale were said to be receiving no consideration. "If you can get it for less than 3 cents, I don't know where," said one refiner.

Refined Oil Market Barometer

Improving balance between supply and demand is energizing the heavy fuel oil market, with the tanker and bituminous coal strikes factors in the firmer tone of that division. Gasoline consumption rising, but demoralized retail markets keeping refinery prices at unsatisfactory levels. Both natural gasoline and heating oils believed to have reached their seasonal lows.

MID-CONTINENT. Gasoline up. Naturals holding. Wax strong. Heating oils steady.

EAST COAST. Heavy fuels vigorous. Tanker strike creating generally tight market.

GULF COAST. General market dull. Prices unchanged.

PENNSYLVANIA. Gasoline steady. Lubricating oils firm.

CALIFORNIA. Return of naval vessels to Pacific should strengthen fuel and Diesel oils.

CHICAGO. Gasoline strong and prices higher. Movement of kerosene and tractor fuel brisk.

Heavy Fuel Oils Strengthened in Atlantic Coast Market

By H. STANLEY NORMAN

NEW YORK, May 9.—Heavy fuel oils continued to extend their position in the refined petroleum market spotlight last week. Most refiners on the Gulf Coast elevated their quotations for June 2 cents per barrel to the coastwise trade to a recent peak of 77 cents per barrel. There was no general advance in the Bunker C market in North Atlantic ports, although the company which posted a raise of 10 cents per barrel to $1.05 in the preceding week held its ground.

Practically all New York sellers are asking 2⅞ cents per gallon for industrial fuel oil in tank-wagons, which is an advance of a quarter of a cent in some instances since several were offering this material in New York at 2⅝ cents in the early part of April.

The tanker strike now entering its fourth week is precipitating a tight petroleum market at Middle Atlantic and North Atlantic ports, although the price range is generally unchanged. The rush of boats into service to meet the open-charter market demand produced a slight reaction in rates last week, although 28 cents per barrel for coastwise runs seems to be the low current quotation. Two or three tankers were chartered last week for the Gulf Coast to north-of-Hatteras run for 30 cents. To shade the price of 30 cents for north-of-Hatteras service it is necessary for chartering interests to contract for three or more trips.

The tight industrial fuel-oil market appeared to be practically unrelated to the National Maritime Union strike against Standard Oil Co. of New Jersey, Socony-Vacuum Oil Co., Inc., Tide Water Associated Oil Co. and C. D. Mallory & Co. Rather, the industrial fuel-oil market firmness appears to be based on an actual shortage of material in the hands of Gulf Coast refiners. Some interests are reported considering the advisability of moving heavy California fuel oil to the East Coast, although the Gulf market at 75 to 77 cents gives refiners in that district a cost edge if material is available for satisfying the demand. Chartering of vessels for service between the Dutch West Indies and North Atlantic ports continued without interruption last week, indicating that the major suppliers expect to meet heavy fuel-oil demand through imports.

Reports indicate that approximately 75 boats owned by the four struck companies are tied up at various Atlantic and Gulf Coast ports. Crews have deserted approximately 100 boats, but at least 25 have been continued in normal service by replacement seamen.

Refiners are still hesitant to make a bold heavy fuel-oil market move because of the coal strike. They fear that consumers will accuse refiners of using the shortened supply of bituminous coal as a springboard to higher market ground, although few deny that the supply and demand situation is ample justification in itself for an advance of at least 10 cents per barrel. With cargoes of Bunker C fuel oil on the Gulf Coast quoted at 77 cents per barrel and tanker rate of 30 cents per barrel to north of Hatteras prevailing, it is evident that the laid-down cost in New York is approximately 10 cents per barrel higher than the current general market of 95 cents per barrel. Only one refiner has instituted an advance on the North Atlantic coast to $1.05 per barrel. The same refiner is quoting 85 cents per barrel to shipping companies on the Gulf, but a big majority of the trade continues to offer at 75 cents per barrel in southern water.

Because reasonably low temperatures for this season of the year continue in the Middle Atlantic and New England states and because of the inconvenience of moving material coastwise, the light fuel oils from kerosene down to No. 4 are in firm position. Most of the light fuel oils, however, were reduced an eighth to a quarter of a cent per gallon two and three weeks ago which accounts partially for the current firm position of the market. The tankcar price for No. 2 fuel oil at New York ranges from 3¾ to 3⅞ cents per gallon, while No. 4 fuel oil is offered at the range of 3½ to 3⅝ cents per gallon. Consumption of domestic burning oils has tapered off considerably, but most furnaces in this section of the country are operated from 6 to 12 hours per day, since prevailing temperatures will not permit complete cessation of heating. The turn of industry to heavy fuel oil threatened to become even more pronounced at the close of the past week. The three subway systems in New York, for instance, were compelled to reduce their operating schedules by 20 to 25 per cent due to shortage of bituminous coal. Private utility companies feeling the pinch of the coal shortage have in many instances equipped a part of their boiler capacity with oil burners and have been using liquid fuel for several weeks. It was announced in New York that municipal buildings will be equipped with oil burners in the future.

Interest is reported much keener in the motor-fuel market, and consumption is moving forward at a satisfactory rate considering that weather conditions have been generally unsatisfactory to motorists in this section of the country. The base price of 6 cents per gallon in tankcars for 65-octane motor fuel is unchanged in New York, but at this figure the market is firm and is in position to move forward on short notice. Movement of motor fuel from the Gulf Coast to points of consumption in the Northeast has been hampered by the seamen's strike against the four companies, but boats obtained in the open market have maintained deliveries to points of immediate requirements. Although current transportation conditions have tended to stack up gasoline in the tanks of Gulf Coast refiners, the market there is firm and few suppliers have evidenced need for relief. Motor fuel of 68 octane minimum, and containing lead, is reported at 5 cents per gallon by a majority of Gulf Coast refiners. Unleaded motor fuel of the same octane specifications is quoted currently at 5¼ cents. The motor-fuel market ranges down to a minimum of 4⅜ cents per gallon for material falling below 60 octane. Two cargoes of low-octane motor fuel made from Mexican crude oil were sold in the Gulf Coast export market last week for 3.8 cents per gallon. However, this type of gasoline may be subjected to further costs in the form of legal defense before it is delivered into tanks of the purchaser, and this possibility is doubtless a factor in the f.o.b. price.

Reports from Europe indicate that Rumanian refiners are moving their motor-fuel prices forward, making cargo quotations there slightly higher than on the Gulf Coast. However, most of the Gulf Coast business during the past two weeks has been against the accounts of contract customers rather than in the spot market. A few cargoes intended for export shipment have been moved to North Atlantic terminals to offset the reduced refinery output caused by interruption of crude-oil deliveries.

A dirty tanker was chartered for June loading on the Pacific Coast and discharge at Montreal, Canada, for 64 cents per barrel, possibly indicating the need for industrial fuel oil. Three

(Continued on Page 136)

A. P. I. Weekly Refinery Statistics

Week Ending May 6, 1939

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	502,000	21,897,000	4,910,000
Appalachian	85.9	107,000	3,596,000	715,000
Indiana, Illinois, and Kentucky	89.5	457,000	14,859,000	4,905,000
Oklahoma, Kansas, and Missouri	81.6	251,000	7,594,000	3,876,000
Inland Texas	50.3	97,000	1,602,000	1,764,000
Texas Gulf	89.5	853,000	11,362,000	8,100,000
Louisiana Gulf	97.3	128,000	2,376,000	1,961,000
North Louisiana and Arkansas	55.0	39,000	519,000	765,000
Rocky Mountains	54.2	40,000	1,785,000	718,000
California	90.0	470,000	15,461,000	97,019,000
Total reported	85.8	2,944,000	81,051,000	124,733,000
Estimated unreported	.....	331,000	5,165,000	2,846,000
*Estimated total	.....	3,275,000	86,216,000	127,579,000
*Estimated total previous week	.....	3,405,000	86,794,000	126,712,000
*May 7, 1938	.....	3,201,000	89,689,000	128,863,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending April 29, 1939	278,444,000 barrels
Week ending April 22, 1939	277,156,000 barrels
Week ending April 30, 1938	307,147,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 9, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.1	12.1	4.0	10.0
Decatur	15.1	12.6	4.0	10.0
Joliet	15.1	12.6	4.0	10.0
Peoria	15.1	13.1	4.0	10.0
Quincy	14.9	12.9	4.0	8.7
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	9.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	14.9	13.4	5.0	10.2
Detroit, Mich.	13.1	11.6	4.0	7.1
Grand Rapids	14.0	12.5	4.0	9.7
Saginaw	15.8	13.1	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.0
South Bend	17.1	15.6	5.0	†9.0
Fargo, N. D.	16.7	15.2	4.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.4	4.0	8.0
St. Louis*	14.2	12.7	4.0	8.0
St. Joseph	14.4	12.0	4.0	8.16
Wichita, Kans.	13.9	11.1	4.0	7.4

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective February 15, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents; 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex furnace oil, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex Grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex Grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Di-vided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r. tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	18.5	15.5	7.0	8.5
Augusta	19.5	16.5	7.0	9.0
Macon	18.0	15.0	7.0	10.0
Savannah	18.5	15.5	7.0	8.0
Birmingham, Ala.	18.5	15.5	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	17.5	14.5	7.0	9.5
Vicksburg	19.0	16.0	7.0	9.0
Jacksonville, Fla.	19.5	16.5	8.0	8.0
Miami	19.5	16.5	8.0	8.0
Pensacola	20.5	17.5	9.0	8.0
Tampa	19.5	16.5	8.0	8.0
Lexington, Ky.	19.0	16.0	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	18.0	15.0	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	10.9	12.7	4.0	7.0
Newark	10.9	12.7	4.0	7.0
Annapolis, Md.	12.85	14.35	5.0	9.5
Baltimore	12.25	13.75	5.0	7.0
Cumberland	13.65	16.15	5.0	10.0
Wash'gton, D. C.	10.50	12.0	3.0	9.5
Danville, Va.	14.45	16.95	6.0	12.9
Norfolk	13.25	15.75	6.0	11.5
Petersburg	13.55	16.05	6.0	11.7
Richmond	13.55	16.05	6.0	8.7
Roanoke	14.75	17.25	6.0	11.0
Charles'n, W. Va.	14.05	16.55	6.0	12.6
Parkersburg	13.35	14.85	6.0	11.2
Wheeling	14.35	15.75	6.0	12.2
Charlotte, N. C.	15.65	18.15	7.0	12.1
Hickory	16.15	18.65	7.0	12.5
Mt. Airy	15.95	18.45	7.0	12.3
Raleigh	15.25	17.75	7.0	11.6
Salisbury	15.75	18.25	7.0	12.2
Charleston, S. C.	14.25	16.75	7.0	10.6
Columbia	15.25	17.75	7.0	11.6
Spartanburg	15.95	18.45	7.0	12.4

Price basis to Essolene undivided dealers: Dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gallons or more, consumer tank-wagon price. Single deliveries of less than 50 gallons, 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.75
Spokane	22.0	23.0	6.0	16.75
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

March 18, 1939, split dealer discount was canceled.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	12.0	13.0	5.0	10.0
Pittsburgh	13.0	15.0	5.0	10.5
Allentown	12.75	14.25	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton	13.0	14.5	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.	...	13.5	5.0	10.5
Wilmington	...	12.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
Albany	11.5	13.5	5.0	7.00
*Met. N. Y.:				
Manhat., Bronx	11.6	12.8	5.0	6.75
Queens, Br'klyn	11.6	12.8	5.0	6.75
Staten Island	11.6	13.0	5.0	6.75
Buffalo	12.0	11.8	5.0	6.75
Rochester	12.25	12.75	5.0	7.25
Syracuse	12.0	14.0	5.0	7.25
Boston, Mass.	10.25	12.0	4.0	6.75
Portland, Me.	11.5	13.5	5.0	7.00
Manchester, N.H.	12.1	14.1	5.0	7.25
Burlington, Vt.	12.0	13.5	5.0	7.25
Springfield, Mass.	10.75	12.8	4.0	6.00
Worcester	10.75	12.8	4.0	7.00
Hartford, Conn.	10.75	12.8	4.0	6.50
New Haven	10.75	12.25	4.0	6.00
Providence, R. I.	10.25	12.3	4.0	6.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gallons and under, tankcar price plus 2 cents per gallon; annual purchases 10,000 gallons up to 50,000 gallons, tankcar price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gallons, tankcar price plus 1 cent per gallon; annual purchases 200,000 gallons and over, tankcar price plus one-half cent per gallon. Private consumers will pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gallons will receive a discount of one-half cent per gallon.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	18.0	5.0	15.0
Pueblo	14.0	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	15.0	5.0	13.0
Billings, Mont.	18.0	6.0	13.0
Butte	19.5	6.0	15.5
Great Falls	18.0	6.0	15.5
Helena	19.0	6.0	15.5
Salt Lake City, Utah	17.0	5.0	16.0
Boise, Idaho	†20.1	6.0	18.0
Twin Falls	†20.6	6.0	18.0
Albuquerque, N. M.	16.5	*6.5	10.0

*Includes city tax of .5 cent. †Includes state tax of 1 mill.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
New Orleans, La.	16.75	19.25	*10.0	†11.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡12.5
Lafayette	15.00	17.50	8.0	‡10.0
Lake Charles	14.75	17.25	8.0	‡12.5
Shreveport	13.50	16.00	8.0	‡11.0
Knoxville, Tenn.	18.00	20.50	8.0	14.5
Memphis	16.00	18.50	8.0	12.5
Chattanooga	17.50	19.00	8.0	14.0
Nashville	17.00	17.50	8.0	12.0
Bristol	18.25	16.50	8.0	13.0

Essolene at dealer price less .5 cent per gallon to undivided dealers.

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gallons, consumer tankcar plus 2 cents per gallon; 50 to 199 gallons, consumer tankcar plus 1 cent per gallon; 200 gallons and over, consumer tankcar plus .5 cent per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank-Wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	17.5	15.0	6.0	10.3
McCook	17.0	14.0	6.0	9.0
Norfolk	17.9	14.9	6.0	10.7
North Platte	18.3	15.9	6.0	11.1
Scottsbluff	17.0	14.9	6.0	11.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Texarkana, Ark.	13.0	5.0	8.0
Fort Smith	13.25	5.0	7.5
Little Rock	16.75	7.5	8.0
Muskogee, Okla.	12.5	5.0	7.0
Oklahoma City	11.0	5.0	6.5
Tulsa	12.0	5.0	6.5

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	11.0	15.0	5.0	7.0
Fort Worth	11.0	15.0	5.0	8.0
Houston	13.0	17.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	22.0	8.0	14.5
Toronto, Ont.	23.0	8.0	15.5
Hamilton, Ont.	23.0	8.0	15.5
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Nebraska) April 26 reduced dealer gasoline 1.5 cents in McCook; April 29, reduced tank-wagon gasoline .5 cent and tank-wagon kerosene 1 cent in McCook.

Standard Oil Co. of California May 1 advanced tank-wagon kerosene .25 cent throughout Washington owing to an increase of that amount in state tax.

Socony-Vacuum Oil Co., Inc., April 15 reduced tank-wagon kerosene .25 cent in Albany, New York, Buffalo, Syracuse, Manchester, Burlington, Worcester; .75 cent in Rochester; 1.25 cents in Springfield. April 28, reduced tank-wagon gasoline .25 cent in New Haven.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 9, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04¾
70-72 octane (regular)	.04⅞	.05
60-62 400 grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04¾
70-72 octane (regular)	.04⅞	.05
64-66 375	.04	.04¼
68-70 360	.05	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04¾
70-72 octane (regular)	.04⅞	.05
60-62 400	.04⅛	.04¼
64-66 375	.04	.04¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅝

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.04¼
67-69 octane		.04¾

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04¾
70-72 octane (regular)	.04⅞	.05
60-62 400 grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04¾
70-72 octane (regular)	.04⅞	.05
64-66 375	.04	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.04½
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.06¾

All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.04¼	.04⅜
60-64.9	.04⅝	.04¾
65 octane and higher		.04¾
68-70	.04⅞	.05⅛

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02½
Grade 18-55	.03	.03⅛

NORTH TEXAS—

Grade 26-70		.02½
Grade 18-55	.02⅞	.03

CALIFORNIA—

75-85 375-390	.06¼	.06¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03¾	.04
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅞	.04⅛
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.04¼	.04½

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03¾	.03⅞
42-44	.04	.04⅛

NORTH TEXAS—

41-43	.04¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04¼

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

45	.05	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅝

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04⅛
42-44	.04¼	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾	.05¾

NEW YORK (Bayonne, N. J.)—

41-43		.04⅜

***GULF COAST (domestic)—**

41-43		.03½

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½	.03⅝
No. 1 prime white, 38-42	.03¼	.03½
No. 1 straw, 38-40	.03⅛	.03⅜
No. 2 straw, 32-36	.02⅝	.03
No. 2 dark, 32-36	.02⅝	.02¾
No. 3 zero to 15, 28-32	.02½	.02⅝
No. 3, 15 and above, 28-32	.02⅜	.02½

NORTH TEXAS—

No. 1 prime white, 38-42	.03¼	.03½
No. 1 straw, 38-40	.03⅛	.03⅜

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03⅜	.03⅝

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅜

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03⅞
No. 1 prime white, 38-40	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅜	.03¼
No. 3, zero to 15, 28-32	.03	.03⅛
No. 3, 15 and above, 28-32	.02¾	.02⅞

NEW YORK (Bayonne, N. J.)—

*No. 1	.04¼	.04⅜
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅝	.02¾
No. 4 low pourpoint, 24-28	.90	.95
No. 4, 15 and above, 24-28	.80	.85
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH TEXAS—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low pourpoint, 24-28	.90	1.00
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low pourpoint, 24-28	.95	1.05
No. 4, 15 and above, 24-28	.80	.90
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.04½	.04¾

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus Diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03
43-47 Diesel	.03¼	.03½
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)	.72	.75
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04
28-30 Diesel (lighterage 6¼c per bbl.)		1.65
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)		.03¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.17½	.18½
15 pourpoint	.16½	.17½
25 pourpoint	.15	.15½
Steam refined:		
600	.08½	.10
650	.10½	.11
600 flash	.11	.12
630 flash	.13½	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¾	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pourpoint	.18½	.19
10 pourpoint	.18	.18¾
15 pourpoint	.16½	.17
25 pourpoint	.15	.15½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.19½	.20
10 pourpoint	.19	.19¾
15 pourpoint	.18½	.19
25 pourpoint	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0285	.03

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0275	.0280
124-126 (a.m.p.) w.c. scale	.0275	.0280

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0350
125-127 (a.m.p.) wax		.0360
128-130 (a.m.p.) wax		.0375
130-132 (a.m.p.) wax		.0435
133-135 (a.m.p.) wax		.0465
135-137 (a.m.p.) wax		.0490
124-126 (a.m.p.) w.s.	.0255	.0260
124-126 (a.m.p.) y.s.	.0250	.0255
Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05⅛	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¼	.04⅜
60-62 400	.04¼	.04⅜
61-63 390	.04⅜	.04⅝
64-66 375		.04

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.04½	.04¾
65-69 octane	.04¾	.05
Above 69 octane	.05	.05½

KEROSENE

GULF COAST—

41-43 prime white		.03½
41-43 water white		.03½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0255	.0260
124-126 y.s.	.0255	.0260

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Van, Tex. (Oct. 11, 1938)* ..... .93
Talco, Tex. (Oct. 11, 1938)* ..... .55
Rodessa, Tex. .....
See North Louisiana gravity schedule
Cass and Panola counties, Texas .....
See gravity schedule
Altus and Tipton† ..... See note below
Cayuga, Tex. (Feb. 15, 1939) ..... .68
Clay Creek, Tex. ..... .85

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Pan American Pipe Line Co. Clay Creek posted by Sun Oil Co.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* ..... $ .96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ..... .99
Mirando (Oct. 12, 1938)† .....
Government Wells (Oct. 13, 1938) .....
See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)* $1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† ..... See note below
Gibson, La. (Oct. 11, 1938)† 1.04
Garden Island, La. (Oct. 12, 1938)‡ 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ 1.14
Schwab, Polk County (Feb. 20, 1939) 1.00
Hardin, Tex. (Oct. 12, 1938)¶ 1.02
Tepetate, La. (Oct. 11, 1938)§ 1.03
Villa Platte, La. (Oct. 11, 1938)§ 1.03
Abbeville, La. (Jan. 1, 1939)§ .....
See note below
Bosco, La. (Dec. 3, 1938)‖ ..... .93
Creole, La. (Oct. 13, 1938)‖ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)‖ ..... See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)** .....
Long Lake, Tex. (Oct. 13, 1938** 1.08
Segno and Wing (Oct. 13, 1938)** .....
See note below
Livingston (Oct. 11, 1938)† 1.10
Gibson, La. (Oct. 11, 1938)† 1.04

*Humble Oil & Refining Co. †Shell Oil Co., Inc. ‡Texas Co. §Continental Oil Co. ‖Magnolia Petroleum Co. ¶Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents. Then a 2-cent spread to 40 degrees and over at $1.14. Abbeville starts at below 36 degrees, 92 cents, 2-cent spread to 40 degrees and over at $1.02. Gueydan, etc., starts below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26-26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16. Schwab posted by Shell Oil Co., Inc.

North Louisiana and Arkansas

Shreveport, La. (Apr. 18, 1939) ... $1.05
Smackover, Ark. (Oct. 5, 1938)* ..... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand ..... See note below
Tullos and Urania ..... .89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Lisbon, La. (April 29, 1939) .....
See note below

*Smackover posted by Standard Oil Co. of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938; Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia, and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude. Shreveport by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp. Lisbon: Caddo Crude Oil Purchasing Co. posts below 34 gravity, 73 cents; 34-34.9, 75 cents; 35 and above, 77 cents. Effective May 1, 1939, Gulf Refining Co. posted a flat price of 77 cents in Lisbon.

Middle Western States

OHIO OIL CO.
(Effective October 13, 1938)

Illinois old fields 1.05
Illinois basin 1.15
Princeton, Ind. 1.05
Western Kentucky (Oct. 13, 1938)† 1.10
Birk City, Ky. (Apr. 12, 1939)¶ 1.00
Greendale, Poster, Crystal and Wise, Mich. (Apr. 20, 1939)*‡ 97½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Apr. 20, 1939)* ..... .95
Freeman-Redding, Mich. (Apr. 20, 1939)* ..... .89
West Branch and Arenac, Mich. (Apr. 20, 1939)* ..... .74
Allegan-Kent (Apr. 16, 1939)§ ..... .88
Bloomingdale (Apr. 10, 1939) ..... .88
Muskegon 1.00
Sherman, Mich. (Apr. 20, 1939)‡ ..... .89
Eastern Kentucky:
Big Sandy River† 1.12
Kentucky River† 1.20

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co. pays above posted prices in Porter, Greendale and Sherman, effective April 20. §Imperial Refining Co. ¶Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)* $ .92
Elk Basin, Wyo. (Oct. 11, 1938)*† ..... .90
Grass Creek, light, Wyo. (Oct. 11, 1938)*† ..... .90
Grass Creek, heavy (Oct. 11, 1938)† .40
Lance Creek, Wyo. Oct. 11, 1938)* .77
Rock Creek, Wyo. (Oct. 11, 1938)*. 1.00
Iles, light, Colo. (Oct. 11, 1938)†... .98
Iles, heavy, Colo. (Oct. 11, 1938)† .92
Dutton Creek, Wyo. (Oct. 11, 1938)† .....
See note below
Frannie, light, Wyo. (Oct. 11, 1938)† .55
Frannie, heavy, Wyo. (Oct. 11, 1938)† .42
Hamilton dome, Wyo. Oct. 11, 1938)† .35
Midway, Wyo. (Oct. 11, 1938)† .....
See note below
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)† 646
Salt Creek (Oct. 11, 1938) See note below
Canon City, Colo. (Oct. 11, 1938)‡. .90
Florence, Colo. (Oct. 11, 1938)‡.. .90
Cat Creek, Mont. (Oct. 11, 1938)‡.. 1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡... .98
Lance Creek, Wyo. (Oct. 11, 1938)‡ .77
Lea County, N. M. .....
See West Texas gravity schedule‡
Artesia, Jackson and Maljamar.....
See gravity table‡
Fort Collins and Wellington, Colo. .....
See gravity table‡
Eddy County, N. M. (October 11, 1938)¶ ..... .77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ¶Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents, 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep takes Standard Oil Co. of Indiana, Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Greybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

SOUTH PENN OIL CO.
(Effective March 6, 1939)

Pennsylvania Grade Oil in National Transit Lines (Bradford field) .. $2.00
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.65
Pennsylvania Grade Oil in Eureka Pipe Line lines 1.59
Pennsylvania Grade Oil in Buckeye Pipe Line lines 1.55
Corning Grade Oil in Buckeye Pipe Line Co. line (Jan. 24) 1.02

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective March 6, 1939)

Bradford, Pa. $2.00
Allegany, N. Y. 2.00

PENNZOIL CO.
(Effective March 6, 1939)

Group A $1.95
Group B 1.94
Group C 1.93
Group D 1.92
Group E 1.90

PURE OIL CO.
(Effective March 6, 1939)

West Virginia $1.59

West Texas

See gravity table.
Fisher County, Tex., April 1, 1939. See note below.
Pecos County (Oct. 11, 1938)* .... $ .78
Pecos shallow (Oct. 11, 1938)† .... .65

*Shell Oil Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co. Fisher County, Tex. By Shell Oil Co. Inc., below 25 degrees 68 cents; 25 degrees, 70 cents, with 2-cent spread to 40 degrees and over at $1.

Crude Oil Price Changes

Imperial Refining Co. reduced its price paid for crude in the Walker pool in Kent County, western Michigan, 10 cents per barrel to a new price of 78 cents per barrel, effective April 27. The company's 88-cent price in Wyoming Township, Kent County, and in Allegan County remains unchanged. Overproduction in Walker Township was given as the cause for the 10-cent cut.

Twenty-eighth Producer In the Ramsey Pool

The twenty-eighth producer in the Ramsey pool, Payne County, Oklahoma, was washed in Monday afternoon at Mid-Continent Petroleum Corp. and others No. 7 Columbia, NE NE SW Section 18-18-2e. It flowed 751 bbls. of oil in the first three hours and made daily potential of 6,021 bbls. from Wilcox sand at total depth of 4,837 feet. A few days earlier same operators had completed No. 10 Ramsey, NE SE NW Section 18-18-2e, for official potential of 6,350 bbls. of oil and 4,100,000 cu. ft. of gas.

First Deep Test in Kansas Sector of Basin Dry

The first deep test to be drilled in the Kansas sector of the Forest City basin since the lease boom began in that area last summer was reported dry and abandoned Monday at W. M. McKnab and others No. 1 Fritz, SW SE NW Section 4-12-14, west of Topeka in Shawnee County. It found Arbuckle lime dry at 2,740 feet, total depth. Only a slight showing of oil was found in Wilcox sand. Mr. McKnab plans to drill another wildcat on his block north of Topeka.

Crude Prices by Gravities

	1 Oklahoma	2 Oklahoma and Kansas	3 North and Central Texas	4 Louisiana and Arkansas	5 East Central Texas	6 Gray County, Texas	7 Hutchinson and Carson counties, Texas	8 Raccoon Bend, Satsuma and Tomball, Texas	9 West Texas and Lea County, N. M.	10 Fort Collins and Wellington, Colo.	11 Anahuac and Dickinson, Mirando, Duval, Texas.	12 Refugio, Texas	13 Gulf Coast Texas	14 Cass and Panola counties, Texas	15 Beaumont and West Beaumont, Texas	16 Lockport, Iowa, Cameron Meadows, Louisiana	17 Artesia, Jackson and Maljamar, N. M.	18 Iowa, Louisiana
Below 18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.79	....	....	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.79	....	$.79	.78	....	.79
20-20.9	$.60	$.70	....	....	....	....	....	....	.55	....	.77	.82	.82	....	.82	.80	....	.81
21-21.9	.63	.72	....	....	....	....	....	....	.57	....	.80	.85	.85	....	.85	.82	....	.83
22-22.9	.66	.74	....	....	....	....	....	$.95	.59	....	.83	.88	.88	....	.88	.85	....	.86
23-23.9	.69	.76	....	....	$.78	....	....	.97	.61	....	.86	.91	.91	....	.91	.88	....	.89
24-24.9	.72	.78	$.71	....	.80	....	....	.99	.63	....	.89	.94	.94	....	.94	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	....	....	....	....	....	$.73	....	....	....	....
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	1.04	.81	1.04	1.01	$.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.28	1.05	1.28	....	.85	....

New York Market

(Continued from Page 133)

additional boats were chartered last week for service between the Dutch West Indies and terminals north of Cape Hatteras, bringing the total of vessels engaged for this service during the next two months to about 15.

The heavy flow of motor traffic to the New York World's Fair is not expected to start until the first part of June, but during the first five days of the exposition more than 1,000,000 paid admissions were registered, and fully 35 per cent traveled by automobile.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939 High	1939 Low	Week ending May 6 High	Week ending May 6 Low	Week ending May 6 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1937	Com. sh. earn. 1936	1938 High	1938 Low	1937 High	1937 Low
69	50	62½	61	62½	Amerada Corp.	788,675	N.P.	50cQ	1-31-39	$2.00	$3.04	$2.52	78	55	111⅞	51½
23½	18⅞	19¼	18½	19⅛	Atlantic Refining	2,663,999	$25	25cQ	6-15-39	1.00	3.51	2.59	27⅝	17¾	37	18
21½	10⅞	13¾	12⅝	13¾	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	1.91	1.14	23¾	12⅛	43⅝	10⅛
19½	12⅝	14⅛	13¼	14	Barnsdall Oil Co.	2,250,344	$5	25cQ	2-1-39	1.00	.85	1.01	21⅝	10½	35¼	10
9¼	7	7⅝	7¼	7⅝	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	5-15-39	.80	1.48	1.18	10¾	7	17⅞	7
31½	21⅛	24¼	22⅛	23¾	Continental Oil of Delaware	4,682,581	$5	25cQ	3-31-39	‖1.00	2.98	2.05	35¾	21¼	49	24
8⅜	4⅞	6⅛	5⅝	5¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	.94	—.03	9¾	5	17⅝	4¾
20¼	12⅜	15½	14½	15	Lion Oil Refining	435,815	N.P.	25cQ	4-20-39	1.00	2.17	1.43	25⅛	15⅝	34	12½
16½	11⅛	13⅜	13	13¼	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-39	.60	2.86	2.57	22⅝	12¼	35⅜	14
14⅞	10⅜	11½	11⅛	11½	Mission Corporation	1,382,945	$10	$1	6-29-38	1.00	1.31	.48	17¾	10⅝	34	15
15½	6½	9	8⅜	8¾	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	...	4.90	2.02	23	12½	41⅜	17⅝
10¼	6⅝	7½	7⅛	7⅝	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	1.30	.70	14⅞	8⅞	22⅞	8
11⅞	9⅞	9⅞	9⅞	9⅞	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	.50	1.39	1.58	15⅞	10¼	29¾	11¾
6¾	5¼	5⅝	5⅝	5⅝	Pan American Pet. & Trans.	4,702,945	$5	$1•	12-21-37	.	1.18	.52	9¼	6¼	17⅛	7
43¾	31¼	36¾	34¼	35⅜	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-39	‖2.00	5.42	4.02	44⅜	27¼	64	30½
22½	17¼	18¾	18¼	18⅝	Plymouth Oil Co.	1,008,000	$5	35cQ	3-31-39	1.40	2.85	1.65	25⅜	15	29⅞	13
11¼	7	8	7⅝	8	Pure Oil Co.	3,982,031	N.P.	25c	12-1-37	...	2.15	1.63	13½	8¼	24⅜	8¾
10¼	6⅝	8	7½	7⅞	Richfield Oil Corp.	3,896,638	N.P.	50c	12-21-38	.50	.35	....	9⅞	5	6½	4⅛
22⅜	16⅛	18¼	17½	18	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-39	1.00	1.97	2.00	27½	15½	54⅛	16
15⅛	11	11½	11	11⅜	Shell Union Oil	13,070,625	N.P.	35c	12-20-38	.70	1.44	1.57	18⅜	10	34¾	14⅞
29½	18½	19½	19¼	19½	Skelly Oil	995,349	$15	50c	12-15-38	1.00	6.07	4.42	34¾	18½	60⅝	26½
13⅜	10½	12	11½	11⅞	Socony-Vacuum	31,151,071	$15	25cSA	3-15-39	.50	1.82	1.38	16⅜	10¾	23¼	13
30⅛	25¼	27	26¼	26½	Standard Oil of California	13,014,754	N.P.	30cQ†	6-15-39	1.40	3.17	1.79	34⅞	25⅛	50	27⅛
29⅛	23¼	25⅛	24⅛	25	Standard Oil (Indiana)	15,272,020	$25	25cQ	6-15-39	1.00	3.66	3.09	35½	24¾	50	26½
50⅝	46	..	..	..	Standard Oil of Kansas	112,837	$10	$2	12-8-38	2.00	6.93	1.91	50⅛	32½	43	30⅝
53¼	42½	46½	44½	46½	Standard Oil of New Jersey	26,224,767	$25	50c¶	6-15-39	§1.50	5.64	3.73	58⅜	39¾	76	42
66	46	54	53	53	Sun Oil	2,316,484	N.P.	25cQ	6-15-39	1.00	3.86	3.25	65⅛	45	77½	44½
3¼	2	2¼	2⅛	2⅛	Superior Oil Corp.	1,388,079	$1	10c	12-28-38	.10	.32	.14	4¼	1¾	7¾	1½
48¼	35	38¾	36⅜	38½	Texas Corp.	10,876,882	$25	50cQ	4-1-39	2.00	5.02	4.10	49⅝	32⅝	65⅛	34¾
5¾	3½	4¼	4	4⅛	Texas Gulf Producing Co.	888,142	N.P.	10c	6-15-39	.15	.68	.93	5⅞	2⅝	9⅝	2
10⅛	7½	8¼	7⅞	7⅞	Texas Pacific Coal & Oil	888,236	$10	10c	6-1-39	.40	1.11	.72	12½	7	16⅝	5⅜
14¼	11¼	12¼	11⅜	11⅞	Tide Water Associated	6,375,253	$10	25c	6-1-39	1.00	2.08	1.03	15¾	10⅛	21⅝	13⅛
19¾	16½	16⅝	16¼	16½	Union Oil of California	4,666,270	$25	25c	5-10-39	1.20	2.58	1.40	22½	17⅛	28¼	17½
23⅝	20⅛	20⅞	20¼	20⅞	Union Tank Car Co.	1,177,381	N.P.	30cQ	3-1-39	1.30	1.70	1.76	23½	20	31½	22
3⅜	2½	3	2¾	2¾	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	.24	—.06	3½	1⅝	6¼	1¾

•Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend. ‖Also right to subscribe to bonds.
¶Also 1 per cent in stock.

New York Curb Exchange

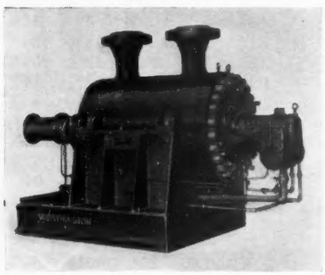
1939 High	1939 Low	Week ending May 6 High	Week ending May 6 Low	Week ending May 6 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1937	Com. sh. earn. 1936	1938 High	1938 Low	1937 High	1937 Low
9	5½	7½	6⅜	7¼	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	$0.27	$0.28	11⅜	5	10	6⅝
7¼	3½	4⅛	4	4	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37		1.90	1.26	10¼	4⅞	21⅜	7
34¾	27¼	31½	31½	31½	Buckeye Pipe Line Co.	200,000	$50	50c	3-15-39	2.00	4.02	4.40	39	22½	51½	36
130	110	114	114	114	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-27-39	6.50	6.73	7.46	128	97	112	95½
9¼	6	6½	6⅛	6⅜	Cities Service (new)	3,714,317	$10	....	6-1-32	..	1.02	.13	11	5⅛	5⅜	1½
1⅛	½	1⅛	1	1	Cosden Petroleum	462,551	$1	...		.	.19	..	2⅜	⅞	5½	1½
23¾	17½	20⅛	19½	20	Creole Petroleum	6,975,383	$5	50cSA†	6-15-39	1.00	1.61	1.23	27½	17½	38¾	20¼
7⅛	5	6	5¼	6	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	1.36	1.26	10¼	5½	18⅝	6½
2¼	1⅝	2¼	2⅛	2¼	Derby Oil & Refining	263,162	N.P.	....	.....	...	1.34	.66	3½	1½	8⅜	2¼
20	17½	..	..	..	Eureka Pipe Line	50,000	$50	50c	2-1-39	3.00	—.12	—.62	31	16	47½	24½
40	29¼	33	31¼	33	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-39	1.00	3.51	2.90	46⅞	33	63½	33
69⅜	53	57¼	55½	55¾	Humble Oil & Refining	8,987,840	N.P.	37½c	4-1-39	3.00	5.22	3.80	72⅝	56	87	54⅞
17	14⅜	16	15⅝	15¾	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	12-1-38	1.25	.98	.95	19½	14⅛	24¼	14½
7	5⅝	6	5⅝	5⅝	Indiana Pipe Line	300,000	$10	30c	5-15-39	.50	1.03	1.00	9⅜	6	15	5⅞
27½	22⅜	25¾	24½	25⅝	International Petroleum	14,324,088	N.P.	$1.25†‡	12-1-38	2.50	.	1.81	31¼	21	39½	23½
3½	2¼	2½	2⅜	2⅜	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	.17	.20	5	2⅛	8¾	2⅝
9½	7⅛	9⅜	8⅞	9	Lone Star Gas	5,553,747	N.P.	20c	4-20-39	.60	1.14	1.02	10⅜	6⅝	14¼	5¼
7¾	4⅞	6⅛	5¼	6	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	3-15-39	.45	.58	.64	9⅜	6½	15¼	6¾
17	15	..	..	..	Margay Oil Corp.	149,918	N.P.	25cQ	4-10-39	1.00	3.26	1.19	24	16	33½	17
8¾	7	7⅞	7½	7¾	Midwest Oil Co.	998,474	$10	50c	12-15-38	1.00	1.14	.95	9¾	6⅝	14⅝	6¼
5½	4⅞	5¼	4⅞	5⅛	Mountain Producers	1,593,584	$10	30cSA	6-15-39	.60	.76	.62	5¾	4½	7⅞	4⅛
13¼	11¼	12½	12	12⅛	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-39	1.00	.96	1.19	14⅝	11½	19½	12
8½	7¼	8	8	8	National Transit	509,000	$12.50	40c	12-15-38	.75	1.19	.79	9¼	6½	12½	7¼
1¾	1½	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	..	.02	.02	2⅝	1½	5	1⅛
4⅞	4	..	..	..	New York Transit	100,000	$5	15c	4-15-39	.25	.49	.34	4½	3½	5⅜	3⅞
5¾	4½	5½	5½	5½	Northern Pipe Line	120,000	$10	15c	6-1-39	.35	.78	.66	6	4	12¾	5¾
7⅝	4¼	5½	4⅝	5½	Pantepec Oil	2,441,142	$1	....	..	...	...	.05	7¾	3½	9⅝	2¾
2¾	1¼	2½	1⅞	2½	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	—.17	.45	4½	1⅝	12¾	2
3	1⅞	2¼	2¼	2¼	Ryan Consolidated	296,931	N.P.	...	....	....	.46	...	4	2⅛	6½	2¼
4	3½	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-39	.30	.85	.41	5⅜	3¼	7¼	3⅞
34⅞	27¾	29¼	29	29	South Penn Oil	1,000,000	$25	37½cQ	3-31-39	1.75	4.64	3.59	39	28¾	56	35
19	17	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-39	2.00	.95	.97	22¼	16½	42	20
18¾	17¼	17¾	17¾	17¾	Standard Oil of Kentucky	2,604,790	$10	50cQ†	3-15-39	1.25	1.60	1.46	18¾	15	21⅛	17¾
10½	6	8½	8½	8½	Standard Oil of Nebraska	161,403	$25	25c	3-29-37	...	—.58	.42	8¾	5½	13¾	8
21¼	17	18⅜	17¾	17¾	Standard Oil of Ohio	753,740	$25	25c	3-15-39	1.00	3.67	4.77	22¾	16¼	45	16
2⅝	1⅞	2	2	2	Sunray Oil	2,006,176	$1	5c	4-27-39	.05	.42	.26	3¼	2	4⅞	2
4	2¾	2¾	2⅝	2¾	Texon Oil & Land	936,024	$2	15cQ	9-30-38	.60	.51	.36	5¼	3½	7⅝	2
5½	2½	2⅞	2⅞	2⅞	Transwestern Oil Co.	750,000	$10	...	.....	....	.48	.06	7⅝	4¼	13⅞	4⅝
3⅜	1⅝	2	1⅞	1⅞	United Gas Corp.	7,818,959	$1	....	.....	...	.25	.20	5¼	2⅝	13⅞	3

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

New or Improved Equipment

Pump for High-Pressure Steam Units Offered by Worthington

Worthington Pump & Machinery Corp., Harrison, N. J., offers a high-pressure, forged-steel-casing centrifugal pump, which for application to



high-pressure steam-generating units, is said to incorporate outstanding features.

The pump casings are of forged steel, and all pressure joints are of the ring type. Construction and design are such that the pump can be completely dismantled without disturbing the suction or discharge piping connections. Difficulties involved in the inspection, replacement or repair of any interior part are eliminated by the special construction of the rotor, which makes possible complete assembly outside of the pump barrel before insertion. All internal joints are so constructed that the hydraulic pressure acts to seat the joints rather than open them. The tightness of the internal joints can be hydraulically tested during the process of assembly.

Whaley Now With Hydril Co.

C. F. "Chet" Whaley, appointed special sales representative for Hydril Co., will make his headquarters in Houston, Tex., and he recently returned to that city after spending three months at the plant in California studying the manufacture and design of the complete line of Hydril products.

Mr. Whaley has had experience in the producing and drilling divisions of the oil industry in the California, Rocky Mountain, Mid-Continent, and Gulf Coast areas, and for the past few years has been associated with the equipment branch.

Mussler Manager of Tubular Sales

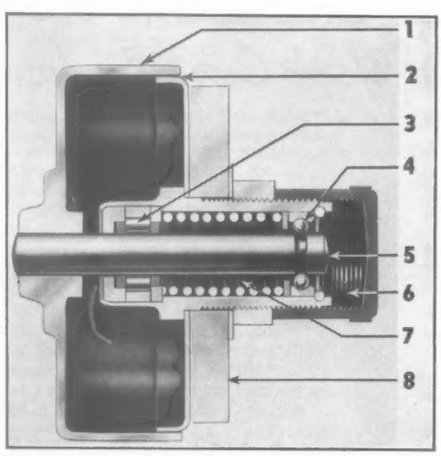
Jack A. Mussler, formerly district manager of tubular sales for Continental Supply Co. in Houston, Tex., has been appointed manager of tubular sales with headquarters at the company's general offices in the Continental Building, Dallas, Tex.

Mr. Mussler, who began his business career with Continental's parent company, Youngstown Sheet & Tube Co. in 1923, was one of the first graduates of that company's training school. He early specialized in the sale of tubular products, and in 1928 was sent abroad on sales work, which took him to England, France, Burma, India, Iraq, and Egypt. In the following year he traveled extensively in South America in the company's interest. In 1930 he was placed in charge of Youngstown's tubular sales in Oklahoma and Kansas. Two years later he was transferred from Tulsa to Houston where he became district manager of tubular sales. In 1935 he joined the Continental organization in a similar capacity.

Light, High-Speed Antifriction Idler Pulley Offered by SKF

Widespread acceptance of an economical, free-running idler pulley in the textile industry has led SKF Industries, Inc., Philadelphia, Pa., to develop this unit for machines in other industries having light- and medium-duty high-speed belt drives.

The ball- and roller-bearing idler pulley consists of a balanced standard or special pulley (1), provided with a dust-proof protective cover (2) to form an effective seal. This seal eliminates all types of abrasive dust from the relatively heavy-duty roller bearing (2), and the stabilizing ball bearing (4). These special bearings run directly on a through-hardened, chrome-steel shaft (5), which gives the unit a maximum capacity within its compact dimensions. The ball bearing (4) acts as an outboard bearing and insures surface-

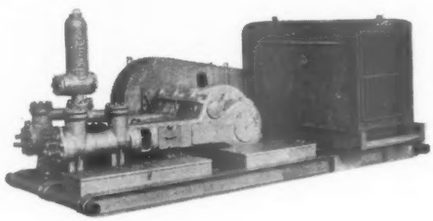


to-surface contact between the rollers and the shaft at all times. In addition, this deep-groove ball bearing carries thrust loads to permit the assembly to operate equally well in either vertical or horizontal positions. Grease cup (6) is provided so that a measured quantity of grease may be placed in it every second year. At the time of the unit's assembly in the factory, an adequate quantity of grease is placed in the large reservoir (7) to last the initial two years' operation (approximately 10,000 operating hours). No. 8 indicates the ease with which the unit is mounted.

These pulley units are easily mounted on almost every type of machine by simply drilling a thirteenth-sixteenths inch or 1-inch hole in a piece of flat steel or casting five-sixteenths to three-eighths inch thick and may be mounted directly to the frame or on several types of swing brackets. With standard well-balanced pulleys, the largest unit of this type is rated for a minimum life of 50,000 working hours.

National's Smaller Slushpump Has Large Pump's Efficiency

Continued expansion of rotary drilling into the shallower fields and the trend toward holes of reduced diameter have created a demand for a



smaller and more mobile power-driven slushpump with deep-hole slushpump drilling efficiency. The Ideal Type C-100 power-driven slushpump, offered by the National Supply Co., is made especially for these requirements. The general design is the same as that of the larger Ideal Type C slushpump line. While the Type C-100 is intended primarily for shallow rotary drilling, where 3½-inch drillpipe is used, it is equally adapted to water-supply, oil-line and other high-pressure work.

The standard water-cylinder liner bore is 6¼ inches and the stroke is 10 inches. A 5¾-inch liner also is available. Maximum working pressure of the fluid cylinder is 1,500 pounds per square inch, and maximum rated hydraulic horsepower is 100 at 65 r.p.m. The weight of the pump complete, with extended skids but less V-belts and sheaves, is 11,100 pounds. Fluid valves and seats are regularly Ideal Type F-2, while fluid pistons and rods are Ideal Type FA made to A.P.I. No. 4 standards. Fluid cylinder liners are Nationalloy, a special National product which has shown not only unusual liner service, but also has contributed to a notable increase in piston life. A complete description of this new slushpump and its features is given in National Supply Co.'s Bulletin 234.

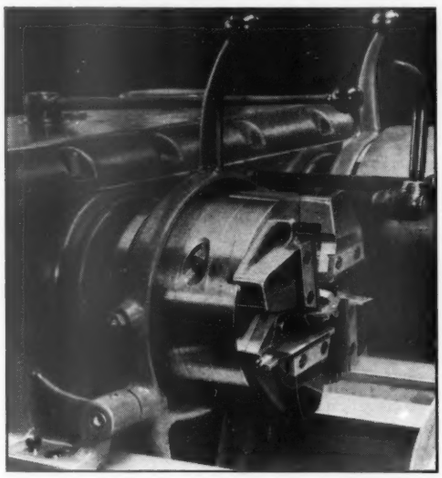
Condit Joins Cooper-Bessemer

Paul A. Condit has joined the Cooper-Bessemer Corp. as control engineer, coordinating Cooper-Bessemer gas and Diesel engines, as prime movers, to manufacturing processes. Mr. Condit attended Denison, Ohio Northern, and Cincinnati universities, majoring in electrical engineering. Upon completing his studies, he entered railroad work, being primarily interested in complex circuit and automatic control installation, test and design.

In 1932 Mr. Condit joined the Pure Oil Co. at its Midland, Mich., refinery. Two years later he was sent to the company's Chicago offices as assistant chief engineer, with duties as electrical and control engineer for all refineries. In 1937 the Mason-Neilan Regulator Co. employed Mr. Condit as development engineer and he continued in that capacity until his recent affiliation with Cooper-Bessemer. His headquarters will be at the Mount Vernon, Ohio, offices of the company.

Landis Machine Co. Introduces New Principle of Threading

Landis Machine Co., Waynesboro, Pa., has developed a new method for the cutting of tapered threads with Landis pipe- and nipple-threading heads. This new principle of threading incorporates changes in the design of the present



threading head, but these changes do not affect the outward appearance of the head. The operating mechanism within the head has been redesigned so that as the die-head advances the undercut the end of the work will contact the reamer and thus cause the chasers to recede to produce a tapered thread. This receding action does not commence until after the first two or three threads are formed. Thus the term "semireceding" is used. The reamer mechanism is used to establish the total thread length, and since the reamer mechanism is in no way connected to the size adjustment mechanism, it is possible to adjust the die-head for size without affecting the thread length.

By using the semireceding action rather than a full receding action the necessity for using a leadscrew to propel the head forward is eliminated. The first two or three threads formed before the receding action begins to function are sufficient to provide a lead-nut action for the chasers and the manner in which the chasers are applied to the head provides the correct taper for the first few threads.

A much freer cutting action is obtainable with the semireceding head, which automatically reduces the cutting strain as the head advances. The quality of the thread produced is improved, the taper will be more accurate and the power consumption will be much lower.

This semireceding feature is applicable only to Lanco internally tripped pipe- and nipple-heads. Heads of this type can be easily changed over to the semireceding type. An application for a patent has been filed.

Here and There With Men Who Manufacture Equipment

Dayton Rubber Manufacturing Co. has opened the largest warehouse of V-belts in the United States at 1519 Santa Fe Building, Dallas, Tex. This warehouse stock, the fifth opened by Dayton in the Southwest, is under the direction of Edward P. Spore, district manager.

Republic Steel Corp. has moved its Tulsa district offices to the Philtower Building. Hoyle Jones is manager.

J. S. Watson, vice president and general manager of Link-Belt Co., with headquarters in Indianapolis, Ind., attended the Oil-World Exposition in Houston, Tex.

M. E. Canfield Co., manufacturer's agent, 420 East Third Street, Los Angeles, Calif., now represents Laminated Shim Co., Inc., Long Island City, N. Y., in the California territory south of the northern boundaries of San Luis Obispo, Kern and San Bernardino counties.

Union Wire Rope Corp., Kansas City, Mo., has appointed C. A. Shacklette sales representative in southern Illinois, southern Indiana and western Kentucky. Mr. Shacklette's headquarters will be at 1000 Locust Street, Owensboro, Ky.

C. N. Kirkpatrick has been elected a vice president of the Landis Machine Co., Waynesboro, Pa., manufacturer of thread-cutting equipment. Mr. Kirkpatrick will continue as secretary of the company.

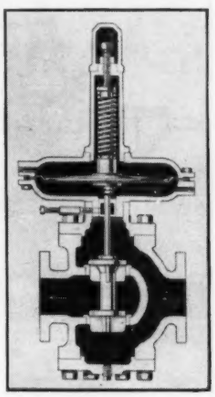
David Dasso resigned April 1 as vice president of the American Locomotive Co., Diesel Engine Division. He will be retained in a consulting capacity by the company and will continue as United States representative of Sulzer Brothers, Ltd., of Winterthur, Switzerland.

Lohrke Representing Vortox

O. H. Lohrke, who has been engaged as sales engineer for Vortox Manufacturing Co., Claremont, Calif., in the Mid-Continent area, will establish branch offices in Dallas, Tex., and Tulsa. His present headquarters are with Happy Belting Co., Tulsa, Mid-Continent distributor for Vortox. Mr. Lohrke began his business career as a salesman for Hart-Parr Co., Charles City, Iowa, in 1919 and became tractor division manager. In 1932 he joined Allis-Chalmers Manufacturing Co., Milwaukee, Wis., as tractor division manager, remaining with that organization till 1935, when he withdrew to devote his attention to a hardware business of his own in Los Angeles, Calif., and to his orange grove at Riverside, Calif. In his new post he will introduce the new Vortox full-oilbath air-cleaners for oil-field engines and compressors.

Improved Differential Pressure Controls Offered by Fisher

Two new and improved differential pressure controls, Types 146 and 147, have been added to the line of automatic controllers manufactured by Fisher Governor Co., Marshalltown, Iowa. According to P. A. Elfers, sales manager, these controls offer a distinct advantage in maintaining a constant differential pressure in a two-fluid system, or maintaining a differential across the regulator body. They are designed for service where a differential regulator can be used for approximately proportioning flows and similar functions.



No. 146 is a lever-and-weight type, provided with a stuffing-box in the upper diaphragm casing. No. 147 is spring-controlled. The latter is provided with a gasket-tight cap which covers the spring adjusting screw.

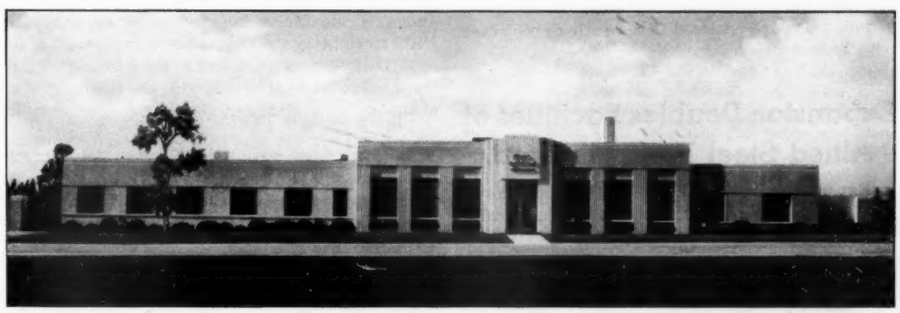
These new controls are constructed with full-capacity bodies which can be readily inverted. The balanced inner valve is not affected by fluctuating pressures. It has double bevel ground seats and is connected to the valve stem by a patented "Flexaline" connection which insures positive seating and more sensitive control. The diaphragm on top of the valve body is made of a special composition and is available in seven different sizes to meet specific working conditions. The differential pressure ranges recommended by the company are from 1 to 50 pounds.

Dowell Enters Eastern Kentucky

Dowell, Inc., has reopened its treating station on the L. & N. Railroad siding at Ravenna, Ky. In addition to the regular acidizing service, Dowell offers special services in connection with the chemical treatment of oil and gas wells. The new acid jet gun is expected to find wide application in increasing production in old wells in eastern Kentucky. Carl A. Schacht is in charge of the new Ravenna station.

ENGINEERING LABORATORY WILL FACILITATE RESEARCH

Anticipating an unprecedented advance in automotive science and petroleum chemistry during the next decade, Ethyl Gasoline Corp. has completed an engineering laboratory in San Bernardino, Calif., in order to extend its facilities for cooperative research with oil and automotive companies.

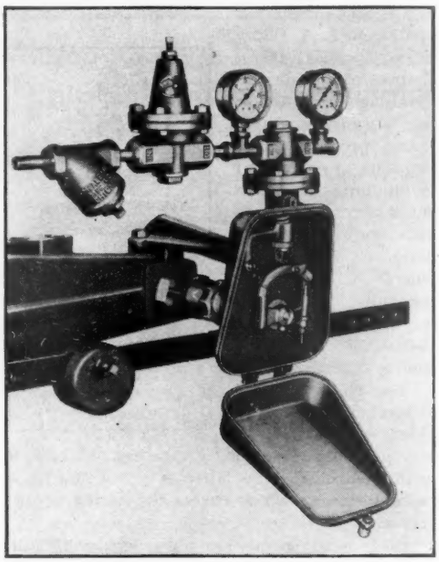


From this center, in a mountainous and desert area constituting a great natural proving ground containing a variety of road conditions that approximate most of those encountered in the United States, the corporation's engineers will carry out a program of research on engines and fuels.

The San Bernardino laboratory, Earl Bartholomew, director of engineering research, said, will supplement the work of the Ethyl Engineering Laboratory in Detroit. The facilities include a gasoline testing laboratory, one of several which Ethyl operates throughout the country to maintain the standards of quality of fuels treated with the antiknock compounds containing tetraethyl lead.

Accuracy and Range of Control Features of McAlear Pilot

The pilot is the heart of any air-operated control system, and upon it rests the responsibility



for correct operation of the complete system. The McAlear Manufacturing Co., 1901 South Western Avenue, Chicago, has placed on the market the No. 95 liquid-level control pilot, which assumes this responsibility. Accuracy and range of control, ease of adjustment, and simplicity and ruggedness of design are named as qualities of this pilot.

Whether mounted on the McAlear float-cage type or the internal float type controller, the No. 95 pilot is designed to maintain either a definite liquid level or a definite variation of liquid level, regardless of flow conditions.

A constant delivered air pressure or any range of delivered air pressure may be had for either the smallest float movement or for a float movement over the entire mechanical limits of the controller by merely adjusting a thumb-nut (90° maximum movement when internal type float controller is used).

The level-control point may be raised or lowered by a simple hand adjustment. The action of the controller may be reversed by merely reversing the cam on the controller-shaft. All adjustments can be made without tools and without taking the pilot out of service. Adjustable safety limits are provided to release or build up air pressure instantly at any required limits of float movement. All moving parts are stainless steel and rotary in action, affording friction-free operation. The pilot is of the noncontinuous bleed type, and all parts are enclosed in a weather-proof case with hinged cover.

Expansion Doubles Facilities of Allied Steel Products Corp.

Expansion plans of Allied Steel Products Corp., 1407 North Peoria Avenue, Tulsa, practically

double the space for loading and storing materials. The purpose is to provide additional space for fabricating sectional steel buildings, the company's principal products, which have been installed in 16 states.

"The present expansion not only will enable us to make new products we have developed, but will provide greater possibilities for capacity production," said Emil C. Hinkefent, president.

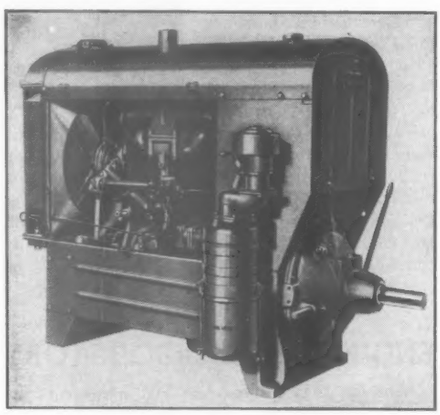
The facilities of Allied for heavy sheet-metal work, with intermediate structural steel equipment, place it in a favorable position for manufacturing specialized items, such as tool-boxes, tool-houses, skip-tanks, louvres, gratings, ventilators, engine coolers, loading-racks and cooling-towers. The company now is making and marketing pump jacks and accompanying surface equipment. It also has a line of welding equipment, including direct and alternating current, rods and equipment, as well as acetylene.

One of Allied's prefabricated buildings, Mr. Hinkefent said, is located at a gold mine site near the top of a Colorado mountain peak and is said to be the highest sectional steel building in the world. Burros and cables were used in transporting some of the sections made in Tulsa up the steep mountain sides.

Power Unit Has Stood Test of Severe, Continuous Service

The International Model U-10 power unit, introduced by International Harvester Co., 180 Michigan Avenue, Chicago, has the same type of ball-bearing crankshaft engine that has stood the test of hard continuous service in all parts of the world. The ball bearings, located at each end of the crankshaft, are of large size. They retain correct alignment and never require adjustment, according to the manufacturer.

Model U-10 is of heavy-duty, four-cylinder, valve-in-head construction, with a 4¼-inch bore,

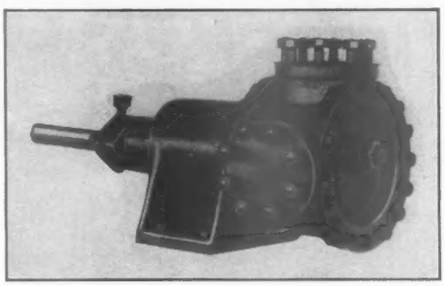


5-inch stroke, and piston displacement of 283.7 cubic inches. It develops a maximum of 45 horsepower at 1,200 r.p.m. when operating on gasoline and 41½ maximum horsepower when equipped with straight gas attachments and operating on 800 B.t.u. gas. Combination gas-gasoline equipment, used extensively in the oil fields, is also available, as well as equipment for operation on distillate.

A gear-driven oil pump delivers oil to the oil filter, where it is thoroughly cleaned before passing to any of the working parts. The oil then passes through tubes to the timing gears, governor, and troughs under the connecting-rod bearings. Dippers at the bottom of the connecting-rod bearing caps constantly splash oil to the connecting-rod bearings, main bearings, camshaft, and all internal engine parts. The oil-filtering element is easily removed for cleaning, but should the filtering element become clogged, the pressure of the oil opens a valve in the base of the filter, permitting the oil to by-pass around the filtering element, thereby assuring constant delivery of oil under all conditions.

Series of Heavy-Duty Pumps Is Offered by Viking Pump Co.

After several years of actual use in the field under varied conditions, the Viking hydraulic pumps in 50-, 90- and 200-gallon per minute sizes are offered. Like the smaller Viking hydraulic pumps, the units are built to perform under pressures up to 500 pounds per square inch on oil free from grit and abrasives. They have been accepted for hydraulic drives, controls, etc.



All three pumps are of the heavy-duty type. The 50-gallon size is equipped with inner and outer angular contact bearings locked to the rotor shaft and a roller-type bearing in the idler gear. The 90- and 200-gallon sizes are equipped with inner pure radial roller bearings on the rotor shaft, and the thrust is carried on a duplex outer ball thrust bearing locked against a shoulder on the rotor shaft. Both these sizes are equipped also with roller-type bearings in the idler. Extra-long packing-boxes are standard equipment.

Hardened steel rotors and idlers are used throughout, having unusual wearing qualities and exceptional strength. Casings and heads are of nickel iron. All three pumps are built in the right-angle port design with the 200-gallon size so constructed that the casing may be turned for either right- or left-hand port style by merely removing the bolts from the back flange.

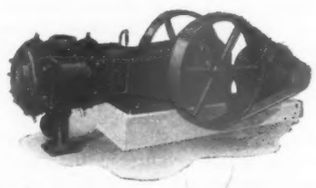
The pump illustrated is the 200-gallon size. More detailed information will be given by the manufacturer, Viking Pump Co., Cedar Falls, Iowa.

I-R Compressor Is Designed for Varied Uses in Oil Industry

The Ingersoll-Rand ES heavy-duty compressors, designed for many oil-industry uses and described in a new 28-page catalog, are built in sizes from 10 to 125 horsepower and pressures from 5 to 2,500 pounds. They are of double-acting, horizontal, crosshead type, designed to run at moderate speeds on heavy continuous service.

They are available for a variety of drives, including V belt, short belt, direct-connected electric and steam, and they have found wide application in many industries. These machines are sold for compression of air and gases, on such services as refrigeration, vacuum, high-pressure and steam-booster. Special nonlubricated cylinders are available for the production of oil-free air or gas.

Four pages of the new catalog are devoted to illustrations of installations, exemplifying service in different industries. Copies of the catalog,



Form 3063-A, are available from Ingersoll-Rand Co., 11 Broadway, New York, or any of its branch offices.

Kansas Fields

(Continued from Page 101)

3,238 feet, the hole filled with oil and it made 24-hour potential of 3,185 bbls. of oil on depthograph test.

McPherson County

Continental Oil Co. No. 2 Hetzke, C E half W half SW Section 20-21-1w, Graber pool, McPherson County, pumped 143 bbls. of oil in eight hours and made daily potential of 428 bbls., completed.

Butler County

National Refining Co. No. 1 Green, C S half S half NW Section 31-27-3, Butler County, found Stalnaker sand at 2,005-19 feet, total depth, and was completed for 4,300,000 cu. ft. of gas daily.

Richmond Drilling Co. No. 4 Rose, NE SE NW Section 17-27-6, Leon area, was drilling below 1,295 feet.

Cowley County

Bess & Gralapp No. 1 Cranston, NE cor. Section 22-32-5, Cowley County, found sand pay at 638-647 feet, total depth, and produced 2,600,000 cu. ft., of gas daily.

McKnab & Blair No. 1 Waite, NE NE NW Section 28-31-4, was rigging up rotary.

Trees Oil Co. No. 1-A Lewis, NW NW NE Section 28-31-4, was a cellar.

Rooks-Graham Counties

Vickers Petroleum Co. No. 4 Luhman, SW NW SE Section 11-9-16w, Laton area, Rooks County, had Lansing-Kansas City lime at 3,223-3,316 feet, total depth, pumped 117 bbls. of oil in eight hours and made potential of 350 bbls.

Continental Oil Co. No. 1 Trexler, C E half W half NE Section 15-9-21w, Morel district, Graham County, pumped 758 bbls. of oil in eight hours and made 24-hour potential of 2,275 bbls. Production was from Arbuckle lime at 3,689-3,721 feet, total depth.

Broadview Oil Co. No. 1 Baxter, NW SE NW Section 2-9-16w, was a location in Rooks County.

Continental Oil Co. and others No. 1 Clark, SE NE SW Section 10-9-21w, Graham County, was a location.

Barton County

Sinclair Prairie Oil Co. No. 1 Redetzke, SW SW SW Section 16-16-11w, topped Arbuckle lime at 3,306 feet, total depth 3,312 feet, was treated with 7,800 gallons of acid, and made potential of 151 bbls. of oil.

Greenwood County

O. F. Duncan No. 8 Schindler, SW NW NW SW Section 16-23-13, Greenwood County, had Mississippi lime at 1,770 feet, total depth 1,800 feet, and initialed 12 bbls. of oil daily.

Oko Oil & Gas Co. No. 16 Shadel, NW NW SW SE Section 15-23-13, was reported abandoned at 700 feet, total depth.

Miscellaneous First Reports

Atlantic Refining Co. No. 1 Gobleman, C NE SE Section 27-21-34w, Nunn pool, northwestern Finney County, was building rotary rig.

Columbia Fuel Corp. No. 1-B McCall, C N half N half SW Section 27-28-36w, in the Grant County gas area, was drilling below 1,459 feet.

Two new operations in Sedgwick County were reported. Ace Oil Co. No. 1 Fortney, NE NE SE Section 21-25-1e, was a rig, and National Refining Co. No. 1 Fick, SW NW NW Section 9-27-2e, had spudded.

In Reno County, Westgate-Greenland Oil Co. No. 2 Hegarty Estate, SE NE SW Section 36-22-5w, was a location.

Shell Oil Co. No. 3 Bitter, SW NE SE Section 6-16-13w, Barton County, was a cellar.

Marylyn Oil Co. and others No. 3 Linsner, SW NE SE Section 3-17-13w, Barton County, was moving in material.

Three new operations in Ellis County were reported. Dickey Oil Co. No. 2 Henderson, NW NW NE Section 7-11-17w, was a cellar. Gulf Oil Corp. No. 2 Mai, SE SW SE Section 14-11-17w, was rigging up rotary. Cities Service Oil Co. No. 8 Rumsey, NE SW SE Section 23-11-17w, was rigging up rotary.

In Forest City Basin

LIBERTY, Mo., May 8.—A showing of oil in Mississippi lime was reported at W. F. Hopper and others No. 1 Black, NW NW NW Section 36-52-32w, Clay County, in the old gas pool northwest of here, causing considerable excitement and resulting in lease-price increases in this area. Mississippi lime was found at 915 feet and it yielded a "good show of oil," according to Mr. Hopper. Drilling was stopped at 919 feet, where casing is to be set. Salt water was found at 795 feet and it will be cased off before the extent of the oil show in Mississippi lime is determined, the operator said. Showings of gas and a small show of oil previously had been reported in upper formations.

A flurry of excitement also was reported in the Mound City area, Holt County, where the first wildcat in the current boom was started. The Mound City wildcat, J. H. Everitt and others No. 1 Spring, SW SW SE Section 30-62-38w, still was bottomed at 2,440 feet, where tools were frozen in the hole, and the crew was cleaning out. Operators have withheld data on this test, but rumors that favorable-looking samples have been taken from the hole caused a revival of lease buying in the district, with buyers paying more than in the earlier stages of the activity.

J. N. Willman of St. Joseph was reported to have bought 10,000 acres of leases in De Kalb County from J. A. Turner, of Tulsa, and was preparing to start core drilling on the tract this week. Mr. Turner retained about 8,000 acres in the block, which was assembled about 10 miles northwest of Maysville, mostly in Township 60n-32w. The deal provides that a well be started in southern De Kalb County at George Moore and others No. 1 McQuate, NE SW SW Section 11-57-31w, now below 400 feet.

Bradley Brothers, Birkett & Gillespie No. 1 Gee, NW NW SE Section 28-60-35w, near Savannah, in Andrew County, was to spud. Davis Brothers of Independence, Mo., have the contract.

C. E. King and others No. 1 Willis, NW NW NW Section 13-55-32w, near Plattsburg, Clinton County, had a fishing job at 260 feet, but was reported drilling again. Contract depth is 2,000 feet.

In the Kansas sector of the basin, W. M. McKnabb and others No. 1 Fritz, SW SE NW Section 4-12-14e, seven miles west of Topeka, Shawnee County, found Hunton lime at 2,380 feet, had a hole full of water at 2,625 feet, and were reported running casing at that depth to shut off water.

West Texas Fields

(Continued from Page 104)

way for further testing on their large block on which the discovery was drilled.

Hamilton County's indicated Mable Falls pool opener will be given an acid treatment before testing begins. Test is the Wallace & Vickers No. 1 Lund, J. P. Bailey Survey, Abstract 51. The test topped Marble Falls lime at 3,230 feet and drilled to a total depth of 3,372 feet, the last 40 feet of which was reported to have carried a showing of oil. Operators cemented 5½-inch casing at 3,249 feet.

WEST TEXAS COMPLETIONS

(24-hour gauges)

Crane County

J. E. Mabee No. 11 McClintic, 2,765-3,050 feet, 359 bbls. Sinclair Prairie Oil Co. No. 4 University, 3,520-90 feet, 827 bbls.

Crockett County

Black & Eubanks No. 4 University, 1,362-90 feet, 58 bbls.

Ector County

Barnsdall Oil No. 3 R. W. Smith, 4,065-4,210 feet, 832 bbls. Broderick & Calvert No. 4 O. B. Holt, 4,225-4,417 feet, 2,644 bbls. Carter & Naylor No. 8 J. E. Parker, 4,090-4,240 feet, 625 bbls. Gulf Oil Corp. No. 180 Goldsmith, 4,070-4,185 feet, 956 bbls. Gulf Oil Corp. No. 185 Goldsmith, 4,153-4,202 feet, 698 bbls. Landreth Production Corp. No. 1-C J. L. Johnson, 4,113-4,233 feet, 403 bbls. Landreth Production Corp. No. 8-M Scharbauer, 4,175-95 feet, 397 bbls. Landreth Production Corp. No. 6-P Scharbauer, 4,162-94 feet, 265 bbls. J. M. Rush No. 1 Midland, 4,355-4,430 feet, 951 bbls. Sinclair Prairie Oil Co. No. 4-79 University, 3,443-3,650 feet, 1,440 bbls.

Howard County

F. W. Merrick No. 7-B H. and L. Chalk, 2,855-2,959 feet, 1,461 bbls. Parker Drilling Co. No. 1 Chalk-Texas, 2,880-2,998 feet, 1,536 bbls. Parten Drilling Co. No. 3 D. H. Snyder, 2,670-2,852 feet, 328 bbls. Sinclair Prairie Oil Co. No. 60 Dodge, 2,540-2,752 feet, 247 bbls.

Pecos County

George T. Abell No. 1 F. A. Knapp, dry and abandoned 2,503 feet. British American Oil No. 18 Payton, 2,037-86 feet, 273 bbls. Pecos State Oil Co. No. 5 State, 1,968-2,097 feet, 263 bbls.

Upton County

Continental Oil Co. No. 15 Burleson, 2,176-86 feet, 58 bbls. (old well plugged back). Harvey-Sergeant & Rutter No. 4 Cordova-Union-Texas Co., 2,165-2,255 feet, 838 bbls. A. J. Rife No. 7 Baker-Republic, 2,190-2,242 feet, 1,013 bbls. Shell Oil Co., Inc. No. 41 Bowen, 2,173-85 feet, 350 bbls.

Ward County

Daniels & Pardue No. 3 Hartage-Wilson, 2,410-31 feet, 94 bbls. Gulf Oil Corp. No. 122 Hutchins, 2,560-2,781 feet, 396 bbls. Gulf Oil Corp. No. 108 O'Brien, 2,662-2,773 feet, 1,248 bbls. Ja-Chel Oil No. 1 Buckner Orphans Home, 2,050-69 feet, 41 bbls. Magnolia Petroleum Co. No. 3-45 Sealy, 2,794-2,835 feet, 389 bbls. McQueen & Clevenger No. 1 George Sealy, 2,816-3,057 feet, 310 bbls.

Winkler County

Lion Oil Refining Co. No. 13-C Hendricks, off production at 3,085 feet. Magnolia Petroleum Co. No. 228 Walton, 3,175-3,259 feet, 222 bbls. Skelly Oil Co. No. 29 Halley, 2,728-2,845 feet, 1,819 bbls.

Yoakum County

Aloco Oil Co. No. 1 J. C. Futch, 4,810-5,230 feet, 464 bbls. Don Danvers No. 1 Clawater-Amerada, 4,911-5,175 feet, 538 bbls. Ohio Oil Co. No. 3 Fairman, 4,985-5,160 feet, 637 bbls. Shell Oil Co., Inc. No. 2-A Brank, 4,980-5,130 feet, 508 bbls. Sinclair Prairie Oil Co. No. 2-A Kendricks, 4,985-5,150 feet, 1,048 bbls. Tide Water Oil Co. No. 3 Koontz, 4,924-5,135 feet, 1,069 bbls.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour gauges)

Brown County

Hart & Son No. 3 Richmond, dry and abandoned at 1,310 feet. Hightower Oil & Refining Co. No. 2-A Newton, dry and abandoned at 1,200 feet.

Calhoun County

Warren No. 1 Cozart, 1,663-73 feet, 61 bbls.

Coleman County

Quinn, Trustee No. 1 Drake, dry and abandoned at 2,108 feet.

Eastland County

Michigan-Ranger Oil Co. No. 2-A Brashears, dry and abandoned at 3,784 feet.

Jones County

Baldwin No. 1 Martin, dry and abandoned at 2,218 feet. Burns & Omohundro No. 1 Mayfield, dry and abandoned at 4,528 feet. Consolidated Oil Co. No. 3 McCaskey, 3,251-69 feet, 528 bbls. in six hours. Falls Refining Co. No. 3 Smith, 3,277-84 feet, 186 bbls. B. Fields No. 1 Gray, dry and abandoned at 3,417 feet. Hedrick Oil Co. No. 2 Akard, dry and abandoned at 3,726 feet. Ungren & Frazier No. 2 Smith, 3,249-71 feet, 390 bbls. in seven hours. Ungren & Frazier No. 1 Woodson, dry and abandoned at 3,360 feet.

Shackelford County

Alexander No. 1 Alexander, dry and abandoned at 786 feet. Jones No. 11 Dodson, abandoned location. Oconee Oil Co. No. 1 Jennings, dry and abandoned at 2,003 feet. Roeser & Pendleton and Continental No. 32-A-85 Cook, 1,373-86 feet, 112 bbls.

Stephens County

Shertzer Brothers No. 6-S Stewart, 1,681-98 feet, 28 bbls.

Senator Borah Chairman Of Pipe Line Hearings

WASHINGTON, D. C.—Senator William E. Borah of Idaho has been appointed chairman of a judiciary subcommittee to hold hearings on the pipe line divorcement bill introduced by Senator Gillette, Iowa, with Senator Borah as co-sponsor. Other members of the subcommittee are Senator Edward R. Burke, Nebraska, and Senator Carl A. Hatch, New Mexico.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

5 ACRE Mineral Deed, Landowners Royalty under entire 80 acres of land leased to Gulf Oil Co. being N½ NW¼ Sec. 30, Twp. 14s, Rge. 31e, full price only $32.50. Perpetual and full participating. Send your check. Guarantee delivery. P. O. Box 968, Hobbs, New Mexico.

320 ACRES, Crane Co., Tex., Magnolia lease, cheap in fee. Address 415 Littlefield Building, Austin, Texas.

SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

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A complete SERVICE EXPERTS in every department of the Oil Business at your SERVICE a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
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200 Don Juan Bldg., Santa Fe, N. M.

FOREST City Basin, Brown Co. Kans. Leases adjoining Carter and Phillips blks. Margaret Haynes, R. #3, N. Topeka, Kans.

FOR SALE Oil and gas leases, drilling propositions and small production. All in shallow territory. Will make price on 500 or more acres, drill and case one or more wells. W. P. HARLEY, Bowling Green, Kentucky.

HAVE 937 acres in Wayne County, Ky. One well drilled, tested 500 bbls. daily. Lost tools in hole. Need capital Address, Olen D. Sharp, Box 164, Sandoval, Ill.

GET THE FACTS about Forest City basin. Don't buy leases because they are cheap, buy because they are on Geophysical highs and known structures. Geologist, Box 423, St. Joseph, Mo.

MISSOURI 5-10 yr., 25c rental per acre leases in path development, also surrounding drilling well. Lowest net prices. Brokers, sales organizations communicate. Mgr. P.O. Box 243, Chillicothe, Mo.

FOR Leases, Royalties, or land in North Missouri (Forest City basin) write J. Mack Hosey, Jefferson Hotel Bldg., Macon, Mo.

$500.00 WILL purchase an interest in offset acreage to well to be drilled on new structure in Pottawatomie County, Okla. Only five interests for sale, production on three sides and excellent surface geology. Address Box J-991, The Oil and Gas Journal, Tulsa, Okla.

WANTED: Leases, development propositions, spreads and royalties anywhere in the Basin play in Illinois, Indiana, or Kentucky. Call in person at Second Floor, Chrisney State Bank Bldg., Chrisney, Indiana, or write P. O. Box 506, or Ph. 66J.

Leases and Drilling Blocks

MISSOURI leases in blocks and scattered acreage. HARRAH & FRITH, Chillicothe, Missouri.

OIL. 1/16th, recorded oil and gas lease assignment in 40 acres adjoining discovery well tract new Kansas high gravity oil and gas field, $125.00. Guarantee to drill and equip well all costs paid when 12 interests sold. 600 to 700 ft. drilling, long lived production. Well adjoining tract has production that will exceed 19% monthly on entire investment. References, maps furnished.
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DEALERS, SALESMEN, sell hot spot leases in the Forest City basin, North Missouri near drilling wells. $1.25 per acre up. Box 2231, Wichita, Kans.

FOR SALE or DRILLING CONTRACT 400 acres Union County, New Mexico. Hall, 27 Alexandra Bldg., Cincinnati, Ohio.

NEW MEXICO
State Oil and Gas Leases
Forty acres and multiples thereof at $6.00 to $60.00 per forty in the Hot Spots. No junk! Buy where the major companies own leases. Write for lists. Twenty years in the business and not a complaint.
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Registered Dealer—State of Iowa
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Box 347, Santa Fe, New Mexico

80 ACRES, 2-26-15, Nowata County, Okla. One well. 3 bbls. Surrounded by active production. This is a steal for the first man here with $500. M. J. Regan, Coffeyville, Kansas.

SHALE gas lease, 100 acres, well now drilling, market 10c per M., two oil pays above gas, production two ways. Half-interest in well and lease $2,000.00. Laurence Price, Coweta, Okla.

FOR SALE, section land Terry Co. Texas. Located Brownfield pasture. Abst. 2, Block Y, Survey 5. Address, James H. Hannan, Bladen, Ohio.

WILL undertake to deliver about 200,000 acres South Georgia leases in blocks 1000 to 50,000 acres on drilling contracts. Two deep tests now drilling. C. W. Deming, Registered Dealer, Waycross, Ga.

Financing

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

AMERICA'S 72 leading underwriters $3.00. "New Type Banking Aid" FREE with order. JOHN MORRIS, 1040 South Paxon, Philadelphia, Pa.

Money Raising

WANT CAPITAL to invest in perpetual mineral rights in North Permian Basin in Texas and New Mexico in major company blocks on geophysical highs. Rapid development under way now. Will take interest after all monies have been repaid. Address Box J-990, The Oil and Gas Journal, Tulsa, Okla.

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OIL FINDING DOWSING METHOD
My deductions a practical method which picks up vibratory reactions emanating from carbo-hydrates. Physico method finds oil, locates faults. Same method discovered great East Texas field also our Watson #2 first producer Wilmington, Calif., field. Employ a man that owns producing wells. I find oil if it exists or no charge. George Miller, 1548 Post, Torrance, California.

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WE WILL contract your Ditching and Bulldozer work. Also have Pipe line equipment for rent or sale. Kova Pipe Line Co., 503 Tradesman Bldg., Oklahoma City, Okla.

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SINCE 1908 Burkhart's legal forms—serving Mid-Cont. oil fields, including Ill., La., Mo., Ind. & Ky. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Okla.

Oil Industry Printing

NEW—N.G.A.A. Casinghead Gas Contract, approved 4/4/39 in Stock for immediate delivery, sample on request. Olds Press, 215 E. 3rd St., Tulsa, Okla.

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SACRIFICE—6 mining claims big hole foot of Squaw Mt. 4 veins. Run carries gold, silver, and lead. Good fishing and hunting—bear, deer, and mountain sheep. Reason for selling, no capital. Mining, 336 E. Granite St., Butte, Mont.

SACRIFICE BARGAIN — Six patented mining claims in the center of the World's Richest Gold Zone two miles from HOMESTAKE MINE, So. Dak. Carries gold, silver, manganese, tungsten. Reason for selling; no capital. Opportunity for oil company or promoter. Will trade for rotary oil drilling equipment. HOMESTEAD, 310 Merchants Nat'l Bank Bldg., Omaha, Nebr.

Mailing Lists

ROYALTY Lists. Unit Owners Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Building, Tulsa, Oklahoma.

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Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

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PRODUCING OIL ROYALTIES
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OWNERS of fractional landowners royalty interests still paying send full details to City Investing Co., 434 Roosevelt Bldg., Los Angeles, Calif.

WANTED producing oil royalties and oil payments in North and West Texas and New Mexico. P. O. Box 1535, Fort Worth, Texas.

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For sale or lease for drilling Carbon Dioxide gas. Dry Ice Plant in neighborhood. Drilling not far. Gas 98% pure. Write
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DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

For Sale—Maps

1939 EDITION MAP OF TEXAS
and Eastern New Mexico shows all OIL and GAS FIELDS up to date
$1.00 per copy
WILDCAT MAP published monthly on same area $3.00 per copy $30.00 one year.
ZINGERY OIL MAP COMPANY
Fair Bldg. Fort Worth, Tex.

Equipment Wanted

WANTED — 40 hp. Bessemer gas engine Type EC 12x18 with Type 2 gear driven fly-ball governor. Engine complete or bed plate. Give price and location.
C. L. BROWN
P. O. Pox 607, Corsicana, Texas.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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YOUNG man, 28, with nine years' office experience, extra good typist, trained in Higher Accountancy. Excellent references, initial salary not as important as opportunity for advancement, available immediately. Address Box J-995, The Oil and Gas Journal, Tulsa, Okla.

YOUNG man, thoroughly capable and experienced, wishes connection with refiner or marketer of gasoline and motor oils, preferably in Southeastern States. Salary or commission basis or brokerage. Available at once and can go anywhere. Thoroughly familiar with all phases of wholesale and retail marketing petroleum products as well as tires and accessories. Address Box J-998, The Oil and Gas Journal, Tulsa, Okla.

MALE SECRETARY-STENOGRAPHER, efficient, executive ability, desires high class connection after June 15. College graduate, 35, single. Address
BOX J-993
The Oil and Gas Journal, Tulsa, Okla.

WANTED SALES RIGHTS for outstanding oil field or refinery items. Complete sales organization. Address Box A-332, The Oil and Gas Journal, Fort Worth, Tex.

COMPTROLLER tax consultant. Age 37 C.P.A. 14 yrs. experience, which includes systematizing, financial reports, and diversified public accounting. Highest credentials as to integrity and creative ability. Address Box J-951, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

PROCESS engineer: 7 years' experience including laboratory supervisor, assistant plant superintendent, extensive road oil manufacturing, research and control, preliminary refinery operations in new plant. Good references. Circumstances necessitate change regardless of remunerations. Address Box J-962, The Oil and Gas Journal, Tulsa, Okla.

ASPHALT chemist; 6 years' experience in road oil manufacture, can also handle other duties of laboratory. Good references. Address Box J-963, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM—CATALYTIC DEVELOPMENT, Ch. E., Ph. D., married, knowledge several foreign languages, 18 years' diversified experience in petroleum industry including scientific research in light and lub oils, equipment design, refinery construction, operation, seven years supervising development of commercial cracking problems and catalytic processes. Desires position affording opportunity to develop several original ideas. Address Box J-982, The Oil and Gas Journal, Tulsa, Okla.

FIRST-RATE EXPERT
In all matters of the oil industry with long experience in all methods of oil well drilling and in all modern methods of oil well exploiting, i.e. water-drive, Marietta, gas-lift, also, first-class geologist and chemist graduated at the University in Vienna, Germany, seeks position in the oil industry in any territory. Address
BOX J-971
The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

ENGINEERING DRAFTSMAN
Philadelphia area. Experience in petroleum refinery design and drafting. Knowledge of processes, layout and piping design of refinery units. Capable of coordinating various phases of layout for structural, piping, instrument and electrical work. Salary commensurate with ability. Give full details, particularly experience, in first letter. Address Box J-994, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

CHEMIST with university degree and with at least 3 yrs. exp. in petroleum refinery laboratory control, desired by a modern central states refinery. Address Box J-973, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED

Experienced refinery and gasoline plant draftsmen and designers. Must have at least two years' experience, write full details. Address Box J-992, The Oil and Gas Journal, Tulsa, Okla.

For Sale—Equipment

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

SUCKER RODS

185,000 ft. ⅞″ and 1″ high tensile, pin and pin rods. These rods have been pumping 6,000 ft. wells in Oklahoma City and are in strictly A-1 condition. Will pump satisfactorily in 3,500 to 4,000 ft. wells, or will make ideal rod lines at a tremendous savings. Call, wire or write for prices.

AL BROWN SUPPLY CO.
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Three 80,000 barrel steel storage tanks and plate steel. We buy pipe and salvage.
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Monahans, Texas.

FOR SALE: At Oklahoma City No. 4A National Tank Oil and Gas Separators 500# working pressure. I. T. I. O. Co., Bartlesville, Oklahoma.

For Sale—Equipment

FOR SALE—SACRIFICE PRICE

TEN Complete Rotary Drilling Rigs. Steam and Diesel Powered. Large and Small.

Large Amount of Extra Drilling Equipment, Boilers, Engines, Pumps, etc.

TEN White Trucks Equipped for Oil Field Hauling.

All equipment in good condition and modern. Will sell any part or all. Especially suited for foreign country. Write me your wants.

ED. BRIGHT
606 N. Field St. Dallas, Texas

15,000 FEET 4-inch O.D. Flues absolutely number one. Priced to sell. M. J. Regan, Coffeyville, Kansas.

NEW Modern Spudder 2,000 ft. capacity. Pulling units with spudders attached. Steel tubing and rod mast mounted. Low prices. M. B. Jensen Co., Rte. 5, West Tulsa, Okla. Phone 5-0882 or 3-5234.

SMALL STILL, 50 H. P. Boiler, OKed for 150 lb. 47 Ft. Tower. 2—10,000 Gal. Vapor Tanks. Cheap. S. L. WEST, Shawnee, Okla.

FOR SALE: Approximately 4,000′ of 4½″ O.D. 32# National Seamless Left Hand Thread Drill Pipe. Cities Service Oil Company, Attention W. J. Short, Bartlesville, Oklahoma.

FOR SALE
Portable drilling rig—practically new. Last word in efficiency and mobility and a sure money-maker in Illinois where the rig is now located. For details and bargain price, address Box J-983, The Oil and Gas Journal, Tulsa, Okla.

SACRIFICE SALE
Rod-pulling and oil well servicing machines mounted on trucks. This fine, standard equipment is only a few months old and will be closed out at a fraction of the original cost. Write or wire Box J-984, The Oil and Gas Journal, Tulsa, Okla.

TRACTORS
Government crawler type Caterpillars, 5 ton $375, 10 ton $695, Slightly used. Perfect condition.
O. C. EVANS
Mt. Sterling, Ky.

FOR SALE

25,000 feet of 8″ line pipe located in Missouri.

One Star drilling machine complete, with cable tool capable of drilling some 2,000 feet or more.

Also complete stock of line pipe, casing, tubing, drilling machinery, etc.

Wire, write or phone for prices.

Louisiana Iron & Supply Co.
Shreveport, Louisiana

California Fields

(Continued from Page 103)

9,865 feet. This former upper zone well, which was deepened to the deep 57 zone was finished mechanically with a 7⅝-inch water string at 9,120 feet and 794 feet of 5-9/16-inch liner including 732 feet of perforated landed at 9,860 feet and 8,490 feet of 3-inch tubing.

Kern County

In the North Belridge field of Kern County, Belridge Oil Co. completed No. 39-26 in Section 26-27-20 flowing 805 bbls. of 31.7-gravity oil cutting 12 per cent and 1,460,000 cu. ft. of gas per day from the Wagonwheel zone with bottom of the hole at 8,275 feet. This new well, which was brought in barefoot through two 1½-inch beans, was finished with a 9-inch water string cemented at 8,200 feet. Top of the Wagonwheel zone was cored at 8,060 feet. The Texas Co. has remedied the water trouble in No. 2 Martin which was completed several months ago and has returned the well to production flowing 465 bbls. of clean 31.4-gravity oil per day from the Wagonwheel zone with bottom of the hole at 8,480 feet. Semitropic Ridge in Kern County is the scene of an aggressive leasing campaign and based on this activity we may anticipate the starting of a wildcat in this section in the near future. General Petroleum Corp., which appears to have started this leasing already has 2,000 acres tied up and Standard Oil Co. and Superior Oil Co. have about 640 each. This leasing started about a week ago following a seismograph survey. Union Oil Co. is setting casing in No. 1-36 Kern County Land, a wildcat in the Shafter district of Kern County in Section 36-27-24 and will make a production test in the near future. The possibility of this well resulting in production is problematical. It may prove to be commercially productive and it may prove dry. Engineers could not determine whether the gray sand found in the bottom of the hole was a gas zone or a water sand and hence the production possibilities of the well must remain conjectural until a production test is made.

Los Angeles Basin

Standard Oil Co. completed a good well in the West Coyote field of Los Angeles Basin when No. 68 Emery was brought in flowing 1,020 bbls. of 31.2-gravity oil per day from 5,585 feet. The well was brought in flowing through a 36/64-inch bean, and tends to confirm data that Standard Oil Co. has a good reserve in the West Coyote field. In the Dominguez field, Shell Oil Co. recompleted No. 27-A Reyes pumping 364 bbls. of 35.3-gravity oil and 450,000 cu. ft. of gas per day after deepening the hole to 4,265 feet.

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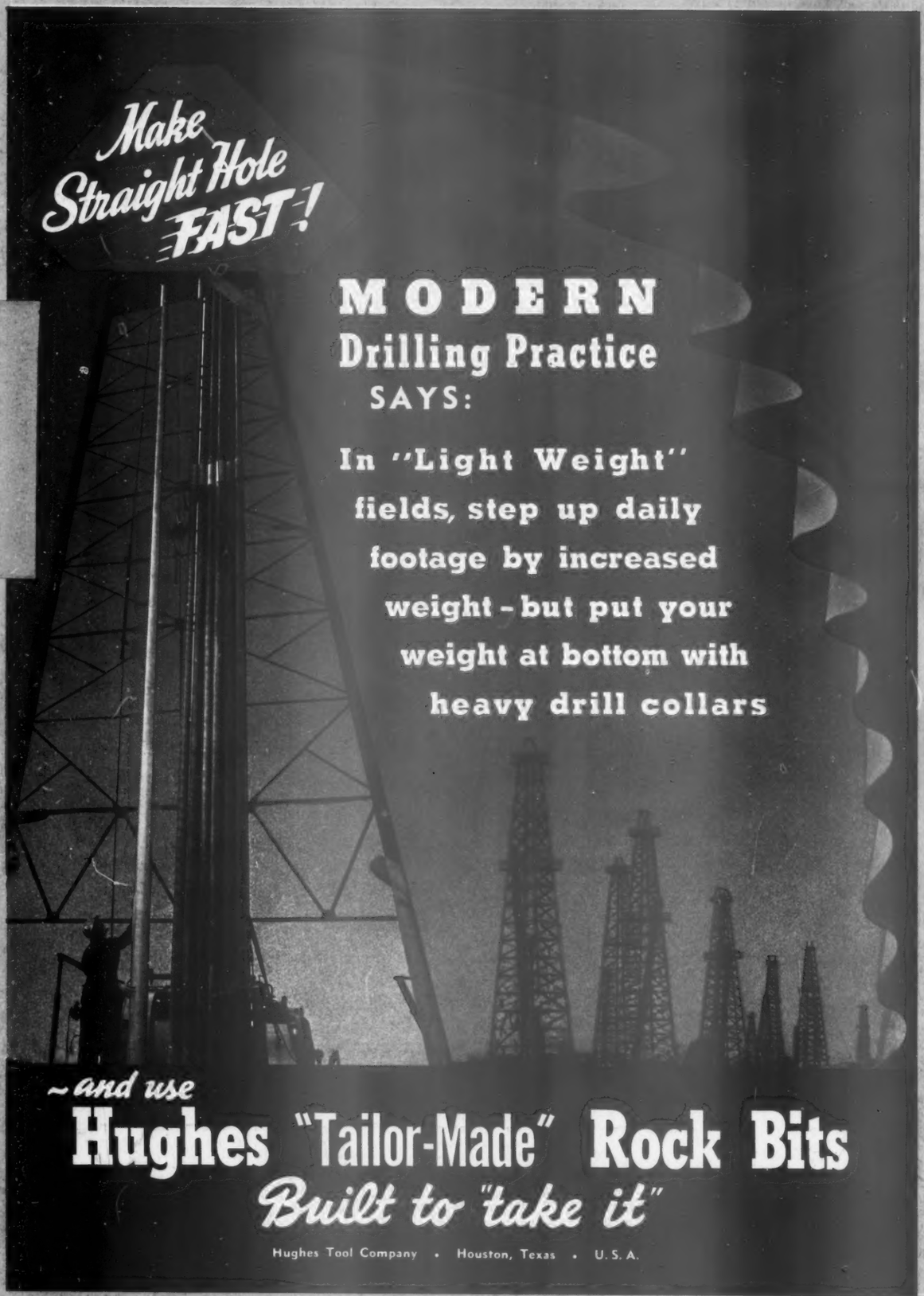
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